Infantry

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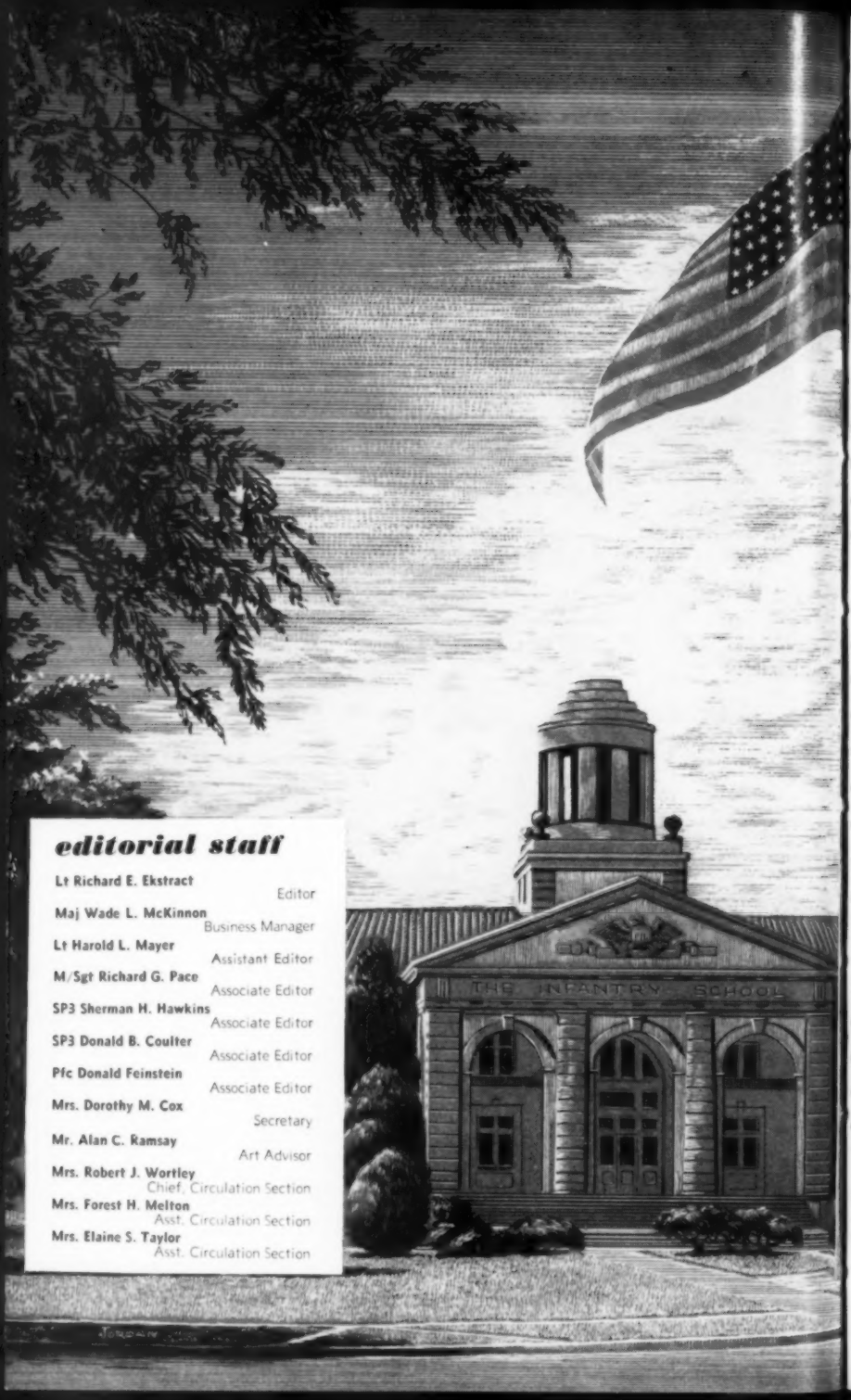
e magazine for infantrymen

OCTOBER, 1955



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THE

Infantry

SCHOOL QUARTERLY

volume 45 number 4 — october 1955

the infantry school

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Published quarterly by The Infantry School, Fort Benning, Ga. Entered as second-class matter June 11, 1948, at the Post Office, Columbus, Ga., under the Act of March 3, 1879. Subscription rates: 1 year, $2.50; 2 years, $4.75; 3 years, $7.00. Four copies a year. Foreign subscribers add $.25 yearly for postage. Address subscription applications to THE BOOK DEPARTMENT, THE INFANTRY SCHOOL, FORT BENNING, GA.

letters

Surprise Package

Ft. Benning, Ga.

Sir:

Having read "Surprise Package" by Lt Colonel J. W. Medusky in your April 1955 issue . . . I am moved to add a word in praise of others of the 82d Airborne Division, who—like Captain Delameter and Lts Lanier, Stephens and Wheelock—didn't know when they were licked.

I was CO, 1st Battalion, 394th Infantry, 99th Division during the "Bulge" and as such had the responsibility for the area which later became the north shoulder of the Bulge. We, too, had many green youngsters for whom that now famous action was their first taste of combat. Proud as I was of my men, I shall never forget my astonishment at the feats performed by those "devils in baggy pants" as one author called them—the troopers of the 82d.

After our unceremonious ejection from the area around Lanzerath where we tied in with elements of the 14th Armored Group, and Losheimergraben, a cross-roads village of about four houses, we fell back on the heights of Elsenborn to dig ourselves into positions from which several determined German attacks could not dislodge us.

Upon our return to the Lanzerath-Losheimergraben area early in February '45 after the Bulge, we were amazed when we heard what the troopers had done in their counterattack. Traveling on foot through waist deep snow concealing a forest of mines, and armed only with bazookas, M-1's and British Gamin grenades, they had stormed through the outer defenses of the Siegfried Line and, using stealth and cunning, had infiltrated the main line itself to arrive at the rear entrances thereto with the command "Open up or we'll blow this place to pieces."

Later, on a visit to the inside of the defensive bunkers, I was even more amazed when, on looking out from the machine-gun towers of the bunkers, I saw how cleverly the Germans had covered every possible approach. It seemed that not even a column of ants could have infiltrated that line undetected.

Such actions as these are the reason why "The Calculated Risk" became just that for the armies of Von Rundstedt and why "Operation Grieb" failed.

Robert H. Douglas
Colonel, Infantry

Col Medusky tells us that Losheim was captured by the 508th Parachute Infantry on 31 January 1944 and that Lanzerath was captured on 30 January 1944 by the 1st Bn, 508th. Captain Delameter and Lts Kampe and Lamm were present and participated in those attacks.

—Editor

How About Helicopters?

6th Spl Infantry Co., USMCR
McKaig's Hill
Cumberland, Md.

Sir:

The article "Blueprint — Air With-

... to the editor

drawal" (April 1955) relates an interesting operation; however, it does not go far enough. It logically follows that if you can get troops out by helicopter you ought to be able to get them in by the same method. Why bother with expensive paratroopers, loss of gear, sprained ankles and time necessary to reorganize paratroops, when you can have your Infantry and equipment available immediately in a heli-drop?

They can also operate from aircraft carriers and their range enables them to support a raid of the type mentioned and no particular worries about the terrain, either. Last — but not least — you can always change your mind about landing at the last minute, and pick another spot or go back home.

H. W. Tubbs, Jr.
Capt., USMC

You may be interested to know that The Infantry School is preparing a field manual on this subject, FM 57-35, Army **Transport Aviation—Combat Operations.** Should be due for release soon after the first of the year.
—Editor

The Cottonbalers Were There

7th Infantry Combat Command
3d Infantry Division
Fort Benning, Georgia

Sir:

While well written, your article on the Battle of New Orleans, "Slaughter by the Levee," appearing on page 43 of the April, 1955 issue ignored the presence of the major American unit participating in this epic engagement, the 7th Infantry Regiment.

The article refers to the presence at this battle of ". . . 4000 American citizens, slaves, sailors, plus 2000 Kentucky riflemen. . . ." Actually, it was the 7th Infantry that held the key central defensive position in the battle, fighting from behind hasty fortifications constructed of bales of cotton, from which their nickname, the "Cottonbalers" was derived. The present Regimental Crest contains a bale of cotton to commemorate this action.

The 7th Infantry Regiment has fought in more battles and served in more campaigns than any other unit in the United States Army—as the more than 60 battle streamers appended to its Regimental Colors attest — and proudly regards itself as the army's most decorated regiment.

The ignoring of the presence of the 7th Infantry at the Battle of New Orleans by *The Infantry School Quarterly*, regarded as the authoritative organ of Infantrymen, is hardly flattering to men of the 7th or to your own historical research.

Matthew C. Stewart
Colonel, Inf
Commanding

Our cotton-pickin' researcher goofed. Hats off to the Cottonbalers.
—Editor

Editor's Page

Dear Reader:

"Operation Reader" has been underway since January. During this time we've mailed questionnaires to almost 6000 of our subscribers. Although it's too early to publish any of our findings, we can say that the response to date has been most encouraging.

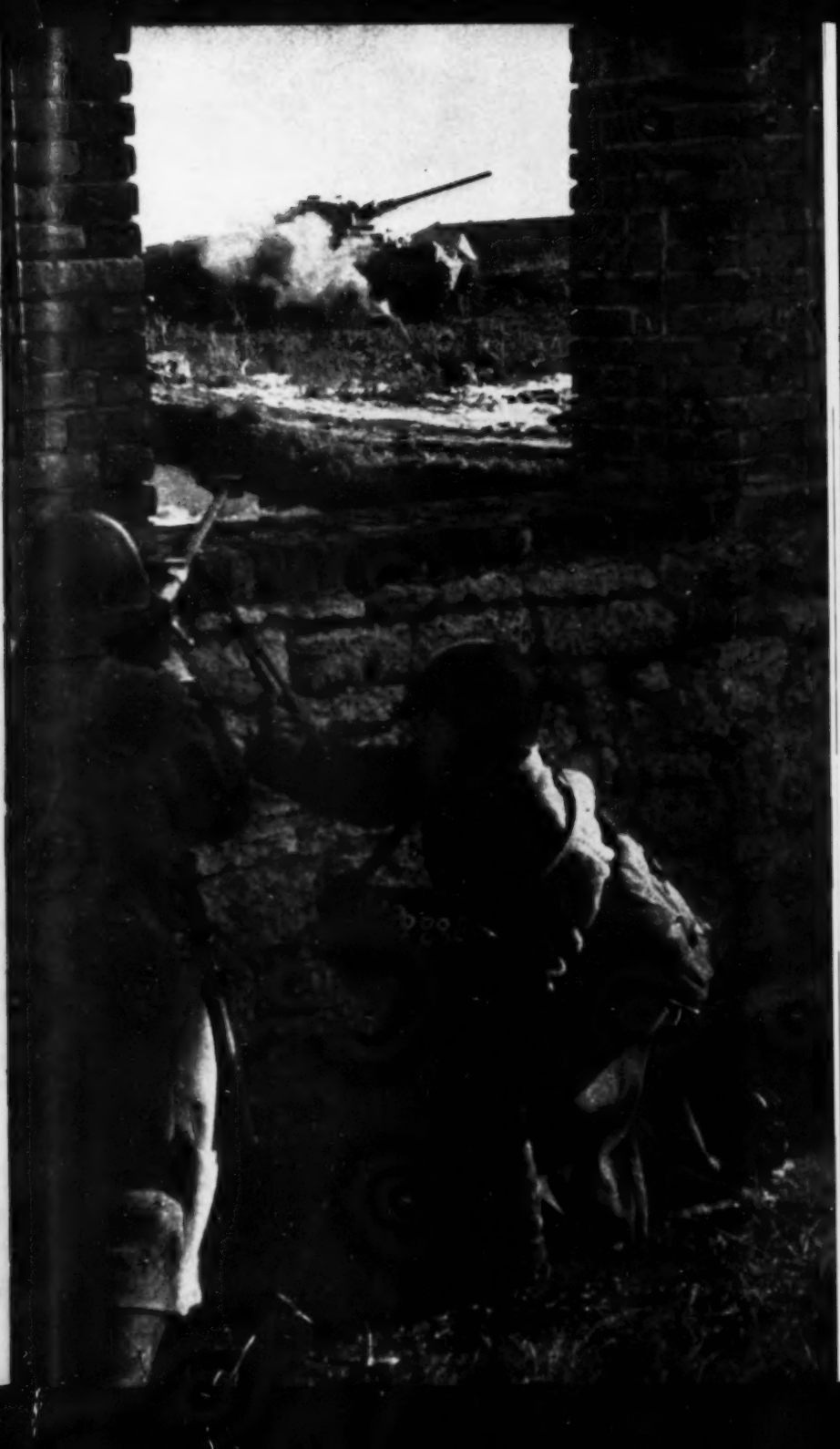
Several of the articles appearing in this issue are being offered as a result of reader requests. It is interesting to note that two articles—"Soviet Tactics" (see picture, opposite page) and "How to Survive an Atomic Blast"—received an overwhelming vote.

Of course, The Infantry School is constantly developing new doctrine and new techniques and we will continue to pass this new information on to you immediately. But we would also like to know your specific military needs. As you know, *The Infantry School Quarterly* is an official non-profit publication. We exist only to serve you.

If you receive one of our survey forms in the mail, please fill it out and return it. In that way, you'll be casting your vote as a member of the editorial board of *The Infantry School Quarterly*.

The Editor

Back in 1943, the Russians used this antitank rifle against German armor. The best they could do with it was blow off a tread, leaving the tank a sitting duck for 100mm rifles. For a close-up of Soviet tactics see p. 60.



Dear Infantrymen:

In the course of my military service I have seen many changes in weapons, doctrine and tactics. It is with considerable pride that I have watched the Infantry keep abreast of these changes, master them and remain the Queen of Battle.

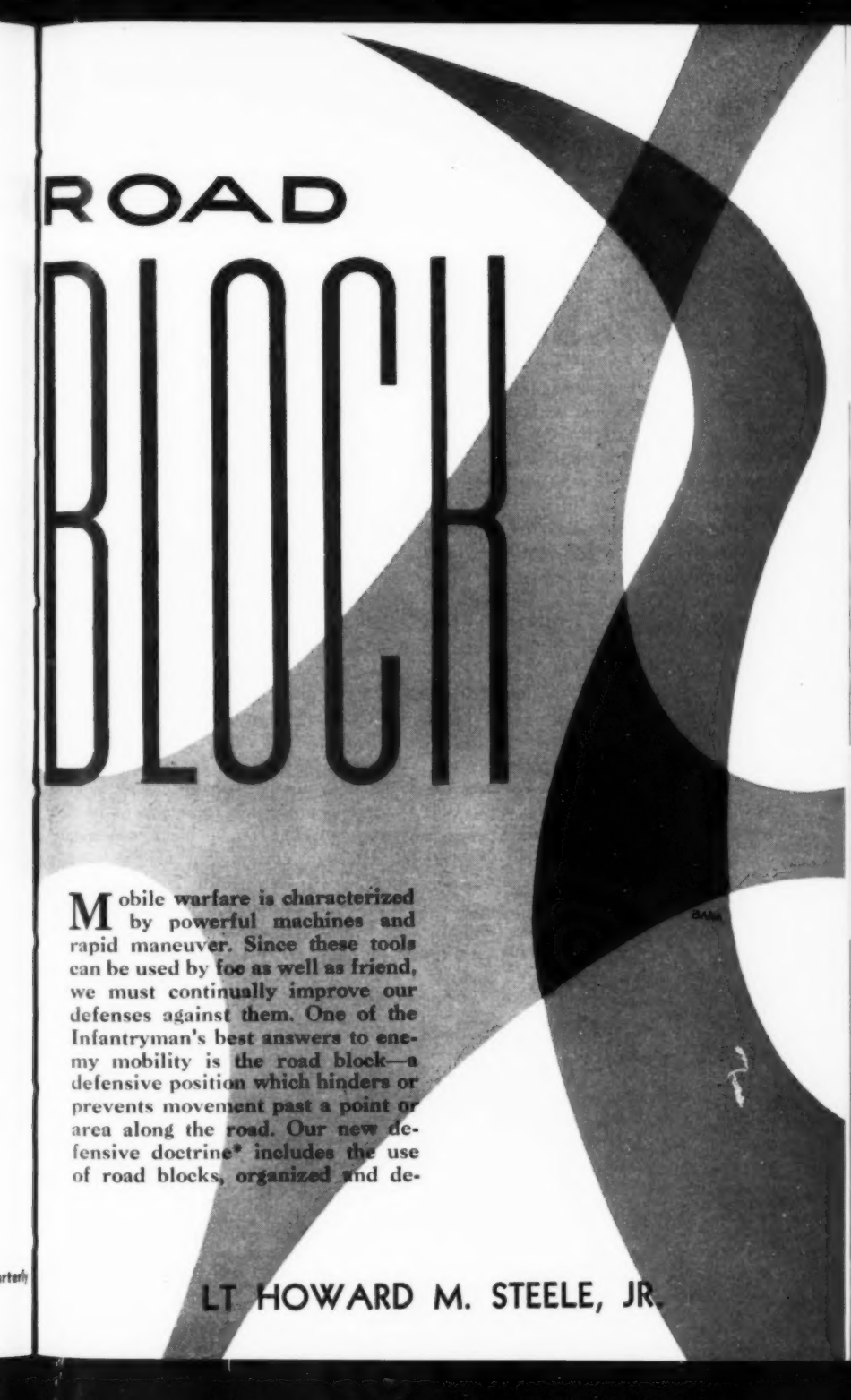
The future promises more changes with greater emphasis on mobility, speed and flexibility on the battlefield. The Infantry has never failed to seek the answers to the problems of today . . . and tomorrow. The success of these efforts is a tribute to the farsighted leadership displayed by the staff of The Infantry School.

It is the forward progressive viewpoint that has made our Infantry the potent force that it is today. We may look rearward occasionally for guidance and to profit by the experience of others, but real progress is made only by looking forward.

I feel singularly honored to return to The Infantry School as its Assistant Commandant, and intend to see that the principles and high standards already established are upheld.

ROBERT L. COOK
Brigadier General, USA
Assistant Commandant
The Infantry School

ROAD BLOCK



Mobile warfare is characterized by powerful machines and rapid maneuver. Since these tools can be used by foe as well as friend, we must continually improve our defenses against them. One of the Infantryman's best answers to enemy mobility is the road block—a defensive position which hinders or prevents movement past a point or area along the road. Our new defensive doctrine* includes the use of road blocks, organized and de-

LT HOWARD M. STEELE, JR.

fended exactly as in the past, on routes leading into the perimeters of battalion strong points. Since we can expect greater emphasis to be placed on road blocks in the future, every Infantryman should be familiar with their organization and employment.

A road block consists of an artificial

The Road Block...

obstacle covered by defending fires. It should not be confused with an ambush. (An ambush is an action designed to kill or capture enemy troops, while a road block only attempts to delay them.) The battalion commander specifies the size of the road block's defending force and the conditions under which that force may withdraw. The defending party varies from a few riflemen to a reinforced company. This group may be directed to maintain the road block for a specific length of time, or, until the enemy threatens to overrun the position.

Road blocks are generally part of a barrier plan, i.e., a series of obstacles arranged in depth along expected avenues of enemy approach. Barriers are employed defensively to cover a withdrawal or to delay initial enemy advance toward the front or flank of a position. They are also used to impede the maneuverability of a penetrating or enveloping force and to canalize penetrations into desired avenues of approach. Offensively, barriers are useful in providing flank security, protecting an unsecured section of the front and in guarding against surprise.

Block the Likely Approach

The barrier plan is developed at division or higher level. A road block, however, is a small unit mission. Let us imagine that you are actually establishing a road block and that you have been assigned a general area for your mission. If possible, your obstacle should be placed alongside natural obstructions such as steep slopes. This arrangement restricts the enemy's flanks and canalizes his movement. Do not select a position solely on the merits of the terrain surrounding it. Be certain that the location blocks the most likely avenue of enemy approach.

Security

Let us suppose that you have placed your obstacle beyond a bend in a road flanked by high, rocky slopes. Its location represents the most likely avenue of enemy approach and offers a defensive position with excellent concealment and

has stolen

fields of fire. You station guards at the site of the obstacle to warn friendly troops of its presence and to prevent unauthorized personnel from going beyond it. You also establish a sentinel post as a precaution against an early, unexpected enemy arrival.

Coordination

Your next step, coordination, is a continuous process. It commences with your assignment as road block commander. Battalion notifies you of the time at which the last friendly forces will withdraw past the road block. They also furnish information about patrols which may be expected to pass through your area. This information reduces the possibility of an accidental fire-fight with your own forces.

The Fire Plan

Your fire plan includes arrangements for the use of organic, attached and supporting weapons. It will enable you to obtain maximum firepower whenever and wherever it is needed. Supporting

*For detailed information, read "Mobile Defense" *The Infantry School Quarterly*, January 1955.

fires are concentrated on likely avenues of enemy approach, enemy assembly areas, in front of the obstacle and defensive position and as cover along your routes of withdrawal. You would use a representative from any attached weapons unit you might have, to assist you in choosing positions for the men and weapons.

The Defensive Position

You have selected a concealed defensive position far enough from the road to avoid enemy fire directed at the obstacle. If visibility becomes difficult, positions can be occupied closer to the obstacle, but beyond hand grenade range. The position appears to be defensible from its front and flanks and permits your men to fire upon the road, adjacent slopes and upon all approaches to the road block. If time is available, your men should construct secondary obstacles on the road and improve their emplacements.

Evacuation and Withdrawal

You provide an evacuation plan for any men who may be wounded, as well

time from . . .

as a withdrawal plan for your entire force. Each man is rehearsed so that the withdrawal will be executed smoothly even under the pressure of an enemy attack. You intend to withdraw the least engaged unit first, but your plan must remain flexible to meet unforeseen circumstances. You also choose a rallying point beyond the range of enemy small arms and coordinate with units that you will pass through during the withdrawal.

Finally, with preparations completed, you receive word that an enemy column has been sighted on the road. You alert your men and they move into their emplacements. The road block area becomes still as weapons fix silently upon their assigned sectors. At last, the raucous sound of the motor column can be heard. A dull-colored enemy tank rounds the curve in the road below and stops abruptly in front of the road block. The remainder of the column screeches to a halt behind it. You give the command to fire.

The full power of your defensive fire smashes down upon the enemy. Prearranged mortar and artillery concentrations hit up and down the length of the column. Each man has a specific target: the light machine gunner has the right front of the column; the 3.5 rocket launcher gunner has the first tank. You have avoided placing all fires at the front of the column (this is where earlier planning pays off.) Black smoke rises over the road, which has become cluttered with damaged vehicles.

The enemy reorganizes and deploys Infantry against your position, but his attack crumbles under your defensive fires. He thrusts against your flank, but is halted again by the fires you planned to counter such a maneuver. Finally, the signal to withdraw—a red cluster of smoke—bursts skyward to your front.

The road block has stolen time from the enemy—a priceless commodity in combat. It has confused and demoralized him and has cost him men and vehicles.

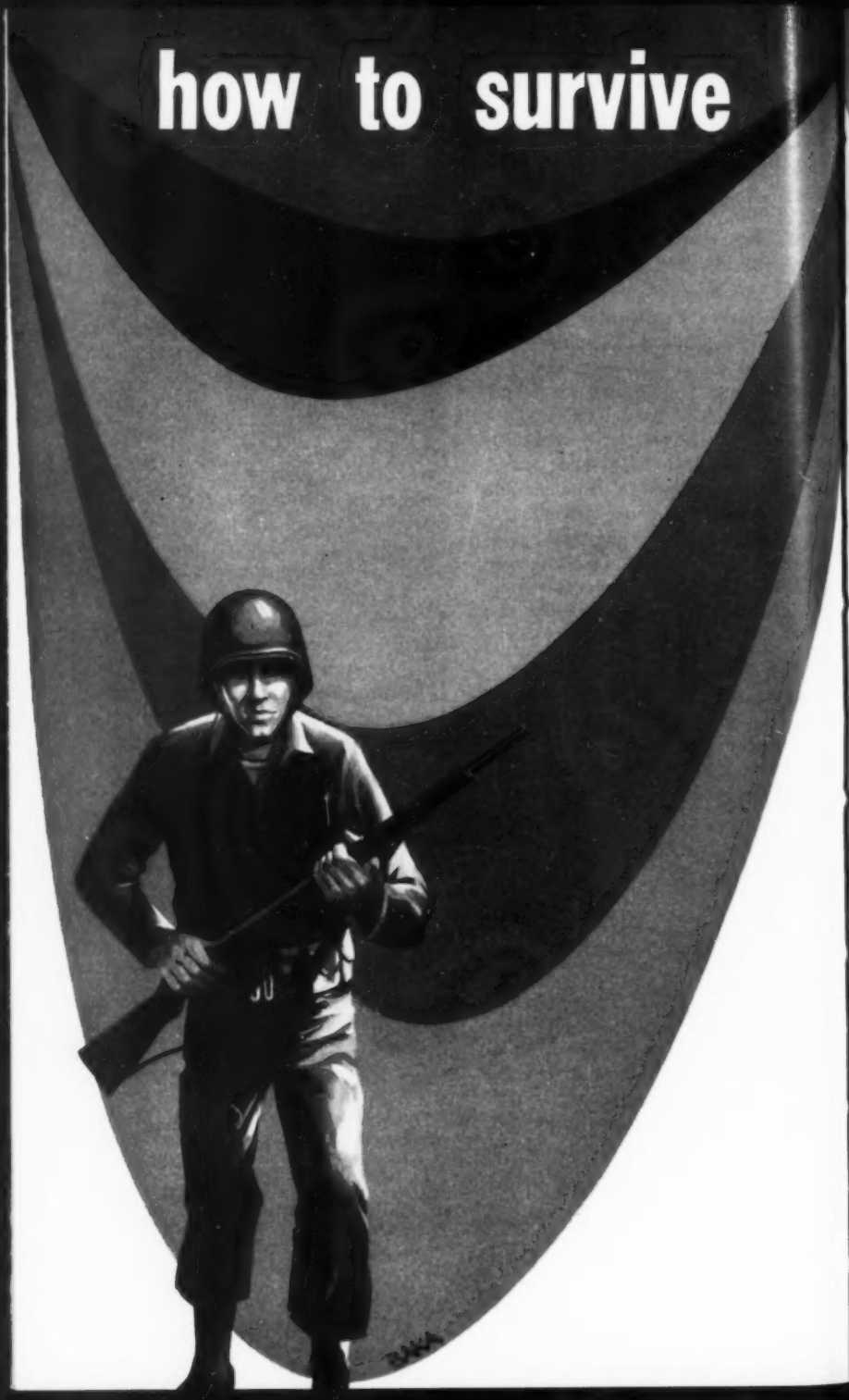
the enemy

You have commanded a successful road block and have proved what it can accomplish when properly organized and defended.

LT HOWARD M. STEELE, JR., presents an example of the organization and defense of a successful road block in this article.

Lt Steele is a graduate of the United States Military Academy (1951). He served as a platoon leader and a company commander in Korea and is presently assigned as an instructor in the Tactical Department, TIS.

how to survive



an ATOMIC blast

Lt Col Robert F. Bell, M.D.

THE deadliest killer in a thermonuclear war may not be heat or blast or radiation. It may be panic. In the grip of panic, an army becomes a mob. And a mob is defenseless, incapable of taking those simple preventive measures which might save it from destruction.

The American citizen—the American soldier—defends himself with sense and courage against any threat he understands and is prepared to meet. The Battle of the Bulge is an example. When dawn broke on 16 December 1944, the roar of German guns along a forty mile front startled American soldiers from their beds. But the surprise barrage alerted our troops for the ground assault which followed. Prior training taught them to recognize a prolonged artillery barrage as warning of a possible Infantry attack. These men were afraid—but fear did not lessen their fighting efficiency. They understood the danger and had been trained to cope with it.

Conversely, lack of understanding and improper training can result in hysteria, confusion and ineffectiveness in the face of disaster. If you recall the evening of 30 October 1938, you will agree. That night Orson Welles broadcast his famous "War of the Worlds." The story, an H. G. Wells creation, vividly described bands of Martians landing on earth. These creatures destroyed all in their path until finally they were, in turn, destroyed by bacteria native to earth. Fantastic? Yes, but realistic enough to cause thousands of New Yorkers to flee in panic when the "inhuman" invaders began wading the Hudson River on their way to engulf the city. Individual and mass hysteria broke out across the nation. Most of those who fled had only one thought—to get away from the grotesque invader who threatened their homes and families.

The truth about Nuclear Radiation is . . .

These men and women had permitted normal fear to mushroom into uncontrollable terror and panic. Had the "enemy" threat been real, any effort to defend themselves would have failed. Why this chaos? The answer is evident. They were not warned of the possibility of an invasion from outer space. They were not trained to combat the fictitious cycloptic, pin-headed spacemen.

An invasion from Mars, fortunately, is improbable. A thermonuclear attack is within the realm of possibility. To win any such conflict, our fighting men must be prepared. The material which follows is designed to provide you with the facts as we know them, and to show—as specifically as is currently possible—what to do. The problems are:

1. How can you control the fear which will naturally result from a nuclear blast?

2. How can you keep fear from turning into uncontrollable terror?

The answers to these questions depend on you. First, *you* understand the weapon and the means of surviving an explosion. Second, impart your understanding to your troops through organized programs of indoctrination and practical work. Prepare them to help themselves after exposure to a thermonuclear attack.

On the following pages you'll find the facts. Study them carefully. The lives of your troops may someday depend upon how well you understand and apply them.

WHAT HAPPENS?

After a nuclear explosion, exposed troops will experience three effects—heat, blast and radiation.

The Heat. Thermal radiation from the fireball of an atomic bomb is more intense than that on the surface of the sun. Unprotected troops will be burned. These injuries will vary in severity from mild sunburn to serious, and often fatal, third degree burns. The severity, of course, depends upon their distance from the blast and the amount of exposed body surface.

Both visible light and infra-red rays will produce "flash burns" on exposed body surfaces and will account for 90 per cent of your total burn casualties. The remaining 10 per cent will be caused by secondary thermal hazards, involving injuries from ignited clothing and equipment. Troops in unprotected positions exposed to heat sufficient to ignite clothing will probably be fatally injured or become long term hospital cases.

If a man becomes a burn casualty, his chances of survival depend upon the degree of injury. For example, second degree burns sufficient to cause blisters and affecting up to 5 per cent of the body can be self-treated. If 10 per cent of the body surface develops second degree burns, out-patient treatment at an aid station or dispensary will be required. Second degree burns affecting 20 to 40 per cent of the body will require hospital treatment. Third degree burns or charring of the tissues will usually require hospitalization regardless of the area involved.

About 60 per cent of the total casualties resulting from a nuclear airburst will be burn cases, if no evasive action is taken. Surface and subsurface blasts will not produce so many burn casualties because part of the fireball is masked. Adequate warning, training in evasion measures and proper protection will help to keep all types of burn injuries to a minimum.

The Blast. A nuclear explosion produces casualties from both blast pressure

. . almost lost among the crowding myths

and flying debris. However, direct pressure from the explosion can be disregarded, because the pressure required to cause severe damage to the body is overshadowed by the accompanying heat effects. You can, however, expect numerous cases of ruptured eardrums. This minor discomfort, a common ailment among artillerymen, will not affect the fighting ability of your unit.

The secondary effects of the blast deserve more serious consideration. When the nitrate-laden ship "Grandcamp" exploded in the harbor of Texas City (a blast of small nuclear proportion), more persons were killed and maimed by the secondary effects of the explosion than by direct pressure. Bricks, steel, glass and men were hurled through the air. Traveling at low velocity, such missiles caused crushing injuries rather than the conventional wounds caused by high velocity missiles in combat.

Essentially the same phenomenon will occur after a nuclear explosion. A blast wave with the force of a tornado will dislodge exposed troops, equipment and vehicles. Soldiers struck by flying debris may be crushed, severely bruised or lacerated.

Approximately 30 per cent of the total number of casualties resulting from a nuclear air burst can be attributed to the blast. But this number can be reduced if proper protective measures are instituted before or during the detonation.

The Radiation. How many times have you heard remarks like these?

"Once you are exposed to radiation, your number is up."

"The greatest threat produced by a nuclear explosion is from radiation."

"Radioactivity causes sterility."

None of these statements happens to be true. They are exaggerations—rumors—the seeds of panic—and they can do incalculable harm. After the Grandcamp disaster, for example, fear-crazed citizens partially evacuated Texas City several times because of rumors of further explosions.

The truth about nuclear radiation is almost lost among the crowding myths, misunderstandings and exaggerations. Your job boils down to this—kill rumors with the *facts*. The *facts* are these:

1. If the explosion is an air burst, radiation casualties will form only 10 to 15 per cent of total thermonuclear casualties. Even this fraction is less impressive if we remember that radiation and other types of casualties overlap: these men probably will suffer the effects of heat and blast as well. Your troops can move into or leave an exposed area a few minutes after an air burst. Surface and sub-surface bursts will require more caution.

2. A moderate dose of gamma radiation is rarely fatal, and even casualties with severe doses can usually be helped by medical treatment. Treatment is based on symptoms, however, and symptoms of radiation sickness may not appear for several hours or days. A soldier is not a casualty until he requires treatment. Even though he has been exposed to a lethal dose of radiation, he can perform his combat mission until symptoms appear.

3. Radioactivity does not permanently affect sexual potency. Men exposed to radiation can have normal, healthy children. Radiation sufficient to produce permanent sterility or impotency would also be lethal.

4. There are means of protecting yourself and your troops against the ef-

fects of radiation, as well as blast and heat. Let's consider some of the precautions which the individual soldier can take to help him survive a thermonuclear attack.

SURVIVAL

Surviving the Heat. An atomic fireball produces burn casualties during the peak intensity of the light given off by the fire ball. This varies from a few tenths of a second to several seconds, depending on the size of the weapon. The heat near ground zero can, in this short space of time, vaporize metal. Sounds pretty grim, doesn't it? Don't be discouraged: there are means of keeping your burn casualties to a minimum. For example, few burn injuries, if any, would occur if troops receive adequate warning of an impending explosion. They can seek refuge in hillocks, breastworks, dugouts, foxholes or shallow trenches and survive with few ill effects. Unfortunately, you won't always be able to rely on timely warning. Consequently, you must counter surprise by constant vigilance and prompt evasive action.

Remember this: protection against the thermal effects of the bomb depends upon whether the rays from the fireball can touch the soldier. His concern, and yours, is to know how to prevent unnecessary exposure. Troops caught in the open near ground zero have little chance to protect themselves—they will become casualties the instant the flash is seen. Since burning rays travel with the speed of light, soldiers farther away will also be burned as soon as they see the explosion. But as the heat travels out to the periphery of the blast area, it loses a great deal of its intensity. The soldier can depend on natural obstacles and on his clothing for some protection. If the fireball burns for several seconds, he can avoid part of its effect by seeking cover. A ditch, a sizeable rock, a stump—anything that casts a shadow—will help protect him from severe flash burn *if he moves quickly*. Even if the heat is sufficient to ignite his clothing, all is not lost. Military clothing is constructed on the layer principle with insulating air spaces between each layer. The soldier who has escaped other effects of the explosion can reduce secondary burn effects by removing the burning outer layers of clothing or stifling the flames.

Surviving the Blast. Adequate warning is the key to surviving blast. The

QUOTH THE RAVEN, "NEVER MORE"

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sudden, intense white light of the explosion is the prelude to the destructive impact of the pressure wave. Fortunately, time is in favor of the soldier. Your troops will normally have the opportunity to take cover before the blast wave engulfs them because it travels at the speed of sound (about one mile in five seconds.) Therefore, your task is to arouse in your men sufficient alertness to prevent complete surprise. This can be accomplished by constantly emphasizing security discipline. Never take a chance, and never relax—even after repeated false alarms. Insist on foxholes in rear areas. A soldier in a foxhole deep enough to cover his body will be well protected—except, of course, in the center of the blast, where the overwhelming force will collapse holes and dugouts. You should teach your men to remain calm—even in the face of a fireball. Though they may already be burned, they can still escape blast injury by falling into a ditch, crouching behind a rock or jumping into a foxhole before the wave strikes them.

Surviving the Radiation. The degree of radiation hazard and the means of protecting exposed troops from the effects of radiation sickness depends upon the type of burst. You must prepare your unit to cope with radiation problems resulting from an air, surface or sub-surface explosion.

Guarding Against an Airburst. The gamma radiation accompanying an airburst is rapidly expended and the casualty danger is immediate. The entire radiation area is small and falls well within the area of maximum heat and blast. This means that airburst radiation will not reach troops at some distance from ground zero, while those exposed near the center will fall victims to blast and heat. Airburst radiation poses a survival problem only to those individuals within the radiation area who are under sufficient cover to protect them from heat and blast.

LT COL ROBERT F. BELL is Chairman of the Medical Committee, Logistics Group, Staff Department, TIS. He was commissioned in the Army Medical Corps in 1938—after graduating from the University of Virginia. He served in Europe during World War II. In Korea, he was CO of the 64th Field Hospital on Koje-do.

This cover may not provide complete protection from radiation, since gamma rays penetrate most material. Nevertheless, one and one half inches of steel will cut the gamma radiation in half. Four and one half inches of concrete or seven and one half inches of earth will do the same job. Therefore, it is important to receive timely warning and take cover behind as much steel, concrete or earth as possible.

Guarding Against the Surface and Sub-surface Burst. Surface and subsurface nuclear explosions are characterized by craters, relatively little instantaneous radiation, but great residual radiation in the form of "fall out." Fall out dust can be readily detected since it resembles soot. If you are unable to see it in the air, the fall out is complete.

Adequate overhead cover will reduce casualties from radioactive dust, but for more complete protection, decontamination teams must "clear" an area at least 100 yards from the perimeter of troop areas. Fall out dust should *not* be allowed to remain in contact with the clothing or body. Men exposed to fall out should be instructed to scrub their bodies and brush, shake and launder their clothing. Men caught in protective dugouts during the attack, should remain in position until decontamination teams can remove the danger of radiation. Unexposed troops can be removed safely from the disaster area after decontamination or the rapid natural decay of the fission products.

(Continued on next page)

MEDICAL TRAINING.

The initial treatment and evacuation of all casualties will be the individual soldier's responsibility. This is where thorough training and indoctrination pays off in combat efficiency after a nuclear attack. Your troops must be able to act by habit, not only tactically but medically. In reality, every Infantryman in your command should be nearly as skilled in first aid as the company aid man. You are probably wondering, "Why? Can't we count on our medical people as we have in the past?"

Let's see why we can't, and what adjustments in our medical training we must make if we are to survive a nuclear war.

Every Infantryman a Medic. No one is exempt from a nuclear attack. Medics attached to or supporting front line units, even in conventional combat, are as vulnerable to death and injury as the Infantrymen they support.

Atomic warfare multiplies the medic's problems. The tremendous number of instantaneous casualties and the limited number of medical personnel and vehicles means delay in evacuation, overloaded aid stations and hospitals. Emergency first aid by medical troops, so important during the first hour after a nuclear burst, will be curtailed—perhaps nonexistent. Therefore, every Infantryman must be prepared to treat himself and his buddy.

First Aid Training and Medical Doctrine. These facts demand new medical training programs and careful rethinking of medical doctrine on casualties and their evacuation. Plainly, the soldier must receive extensive first aid training, and this training must be factual, continuous and practical. Several studies now in progress suggest the thorough training of every soldier in the following first aid techniques:

1. Proper application of tourniquets. (See FM 21-11, par. 3.)

2. Bandaging — Emphasis must be placed upon the use of pressure dressings for hemorrhage control. (See FM 21-11, par. 3.)

3. Splinting—To prevent additional injury from excessive movement, special attention must be directed to splinting. Troops must learn to use field expedients when more suitable splinting materials are not available. (See FM 21-11, par. 10.)

4. Hypodermic administration — Infantrymen must be trained in the proper use of syrettes and ampins. (See FM 21-11, pars. 11-15.)

5. Salt tablets and water—If severe burn cases are to survive, it is essential that troops be completely indoctrinated in the use of salt tablets and water for the replacement of lost body fluids.

6. Artificial respiration—A single method of artificial respiration—the back pressure-arm lift technique — should be stressed. (See FM 21-11, pars. 29-31.)

7. Normal carries for injured—One and two man carries should be stressed. (See FM 21-11, par. 34.)

8. Patient posture—Soldiers should understand the correct methods of positioning for shock and certain injuries. (See FM 21-11, par. 3.)

9. Psychological preparation — All first aid training should emphasize the need for calmness and composure during treatment. A panicky soldier makes a poor medic, and a wounded soldier needs to feel the competence and confidence of the man who treats him.

10. Sorting for treatment and evacuation—Troops must be trained to evaluate the urgency of casualty treatment and evacuation. For example, highest priority will fall to soldiers suffering severe

hemorrhage, shock and chest wounds. Others will be graded on urgency of treatment and chances for recovery and return to combat. Lightly wounded men will treat and evacuate themselves and their buddies along natural lines of drift. The primary object of treatment on the battlefield is to give the most effective aid to the greatest number of casualties. This means treating only those who require treatment and can benefit from it.

The necessities of thermonuclear war dictate tough-minded policies on the evacuation of casualties. Current thinking can be summarized as follows:

1. Soldiers able to perform a combat or combat support mission will not be evacuated from their units.

2. Thorough screening at aid stations will result in the return of many individuals to their units after treatment.

3. Casualties requiring further treatment but not further evacuation will be used to treat and evacuate more severe cases whenever possible.

In thermonuclear warfare, it may be impossible to provide the medical support we have hitherto regarded as standard. More than ever before, survival will depend on the nerve and knowledge of the individual soldier—knowledge and nerve which will enable him to overcome his natural fear, to defend himself and to aid the injured. The American soldier has proven his ability to adapt to new weapons, new ways of fighting. He can do so again. But it is our responsibility to give him the facts and training which he needs—and give them to him now.

SPADES ARE TRUMPS

Fighting from cover is practically second nature to today's Infantryman. Whenever he moves, he carries his entrenching tool, and when he stops, he digs.

How did this come about? We hear of the militiamen of Lexington and Concord taking advantage of natural cover and concealment. But by the time the Civil War began, the tactics of the Revolution seem to have been forgotten. The inexperienced soldiers and civilians thought that the heroic charge and the valiant attack over open ground were the only honorable methods of waging war. When, during the Peninsular Campaign of 1862, General McClellan wisely had his army dig in, the Washington newspapers jeered: "Spades are now trumps."

The later years of the Civil War were to change all this, and make the spade a vital part of every Infantryman's equipment. It was soon seen that rifled weapons made the entrenched soldier practically impervious to assault as long as his flanks were secure, as Pickett's men at Gettysburg and Burnside's at Fredericksburg discovered tragically. Another factor that sped the digging of field fortifications was that it was almost impossible to load the muzzle-loading rifles of the day without exposing the right arm. After many men were wounded in their right arms, commanders began to see the practical advantages of fighting from hasty fortifications.

The siege of Petersburg, Virginia in the last year of the war saw modern trench warfare with all its characteristics. Within three years, the chivalrous but impractical tactics of the past had disappeared, and the day of the trench and foxhole arrived. Spades may not be trumps to the aggressive Infantryman of today, but they're certainly a major suit.

Mr. Norman S. Poser

The touchstone of success:

YOUR RELATIONSHIP WITH YOUR MEN

FOR the moment, we can forget the words duty and responsibility. The question is: How do I get ahead?" And for a junior there is one main road open—he will strive to achieve such a communion of spirit with his subordinates that he will know the personality and character of every one of his men, will understand what moves and what stops them, and will be sympathetic to their every impulse.

This is the main course. The great principles of war have evolved from centuries of observation on how men react in the mass. It could not be otherwise than that any officer's growth in knowledge of when and how these principles apply to varying situations, strategical and tactical, come primarily of the acuteness of his powers of observation of individual men, and of men working to-

US

men, and of men working together in groups, and responding to their leadership, under widely different conditions of stress, strain and emotion.

The roots of this kind of wisdom are not to be acquired from book study; books are a help only as they provide an index to what should be sought. The sage who defined strategy as "the art of the possible" (the art of politics has been defined in the same words) wrote better than he knew. The cornerstone of the science of war is knowledge of economy of men's powers, of their physical possibilities and limitations, of their response to fatigue, hope, fear, success and discouragement, and of the weight of the moral factor in everything they do. Man is a beast of burden; he will fail utterly in the crisis of battle if there is no respect for his aching back. He is also one of a great brotherhood whose mighty fellowship can make the worst misery tolerable, and can provide him with undreamed strength and courage. These are among the things that need to be studied and understood; they are the main score. It is only when an officer can stand and say that he is first of all a student of human material that all of the technical and material espects of war begin to conform toward each other and to blend into an orderly pattern. And the laboratory is right outside the office door. Either an officer grows up with, and into, this kind of knowledge through reflecting on everything that he can learn of men wherever he fits himself into a new enviroment, or because of having neglected to look at trees, he will also miss the forest.

By the numbers, it isn't a difficult assignment. The schools have found by experiment that the average officer can learn the names of 50 men in between 7 and 10 days. If he is in daily contact with men, he should know 125 of them by name and by sight within 1 month. Except under war conditions, he is not likely to work with larger numbers than that.

This is the only way to make an intelligent start. So long as a man is just a number, or a face, to his officer, there can be no deep trust between them. Any man loves to hear the sound of his own name, and when his superior doesn't know it, he feels like a cypher.

As with any other introduction, an officer meeting an enlisted man for the first time is not privileged to be inquisitive about his private affairs. In fact, nosiness and prying are unbecoming at any time, and in no one more than in a military officer. On the other hand, any man is flattered if he is asked about his work or his family, and the average

A man is not just a number.

enlisted man will feel complimented if an officer engages him in small talk of any kind. Greater frankness, covering a wide variety of subjects, develops out of longer acquaintance. It should develop as naturally and as easily as in civilian walks of life; rank is no barrier to it unless the officer is overimpressed with himself and bent on keeping the upper hand: the ranks are wiser about these things than most young officers; they do not act forward or presumptuous simply because they see an officer talking and acting like a human being. But they aren't Quiz Kids. Informal conversation between officer and man is a two-way street. The ball has to be batted back and forth across the net or there isn't any game. An officer has to extend himself, his thoughts, his experiences and his affairs into the conversation, or after his first trial or two, there will be nothing coming back.

It is unfortunately the case that many young officers assume that getting acquainted with their men is a kind of interrogation process, like handling an immigrant knocking for admission to the United States. They want to know everything, but they stand on what they think is their right to tell a man nothing. That kind of attitude just doesn't wash. In fact, the chief value of such conversations is that it permits the junior to see his superior as a man rather than as a boss.

An officer should never speak ironically or sarcastically to an enlisted man, since the latter doesn't have a fair chance to answer back. The use of profanity and epithets comes under the same heading. The best argument for a man keeping his temper is that nobody else wants it; and when he voluntarily throws it away, he loses a main prop to his own position.

Meeting one of his own enlisted men in a public place, the officer who does not greet him personally and warmly, in addition to observing the formal courtesies between men in service, has sacrificed a main chance to win the man's abiding esteem. If the man is with his family, a little extra graciousness will go a long way, and even if it didn't, it would be the right thing.

In any informal dealing with a number of one's own men, it is good judgment to pay a little additional attention to the youngest or greenest member of the group, instead of permitting him to be shaded by older and more experienced men. They will not resent it, and his confidence will be helped.

It should go without saying that an officer does not drink with his men, though if he is a guest of honor at an organizational party where punch or liquor is being served, it would be a boorish act for him to decline a glass, simply because of this proscription. Sometimes in a public cocktail bar an officer will have the puzzling experience of being approached by a strange but lonely enlisted man who, being a little high, may have got it into his head that it is very important to buy an officer a drink. What one does about that depends upon all of the surrounding circumstances. It is better to go through with it than create a scene which will give everyone a low opinion of the service. Irrespective of rules, there are always situations which are resolved only by good judgment. And, of course, the problem can be avoided by staying away from cocktail bars.

Visiting men in the hospital is a duty which no officer should neglect. Not only does it please the man and his family; it is one of the few wide open portals to a close friendship with him. It is

*This article is Chapter XXII, *Armed Forces Officer* (Department of Defense). It is reprinted by permission of The Department of Defense.

strange but true that the man never forgets the officer who was thoughtful enough to call on him when he was down. And the effect of it goes far beyond the man himself. Other men in the unit are told about it. Other patients in the ward see it and note with satisfaction that the corps takes its responsibilities to heart. If the man is in such shape that he can't write a letter, it is a worthy act to serve him in this detail. By the same token when a man goes on sick call, the officer's responsibility does not end at the point where the doctor takes over. His interest is to see that the man is made well, and if he has reason to think that the treatment he is receiving falls short of the best possible, it is within his charge to raise the question. The old saw about giving the man CC pills and iodine and marking him duty is now considerably outdated. But it is not assumed that every member of the medical staff serving the forces will at all times do his duty with the intelligence and reverence of a saint.

A birthday is a big day in any man's life. So is his wedding. So is the birth of a child. By making check of the roster and records, and by keeping an ear to the ground for news of what is happening in the unit, an officer can follow these events. Calling the man in and giving him a handclasp and word of congratulation, or writing a note to the home, takes very little time and is worth every moment of it. Likewise, if he has won some distinction, such as earning a promotion, a letter of appreciation to his parents or his wife will compound the value of telling the man himself that you are proud of what he has done.

Nothing is more pleasing or ingratiating to any junior than to be asked by his superior for his opinion on any matter—provided that it is given a respectful hearing. Any man gets a little fagged from being *told* all the time. When he is consulted and asked for a judgment, it builds him up.

There is absolutely no point in visiting kitchens or quarters and asking of the atmosphere if everything is all right. Men seldom complain, and they are loath to stick their necks out when there are other enlisted men within hearing. It is the task of the officer to *see* that all is right, and to take whatever trouble is necessary to make certain. If he is doubtful about the mess, then a mere pecky sampling of it will do no good. Either he will live with it for a few meals, or he won't find the "bugs" in it.

On officer should not ask a man: "Would you like to do such-and-such a task?" when he has already made up his mind to assign him to a certain line of duty. Orders, hesitatingly given, are doubtfully received. But the right way to do it is to instill the idea of collaboration. There is something irresistably appealing about such an approach as: "I need your help. Here's what we have to do."

An officer is not expected to appear all-wise to those who serve under him. Bluffing one's way through a question when ignorant of the answer is foolhardy business. "I'm sorry, but I don't know," is just as appropriate from an officer's lips as from any other. And it helps more than a little to be able to add, "But I'll find out."

Rank should be used to serve one's subordinates. It should never be flaunted or used to get the upper hand of a subordinate in any situation save where he has already discredited himself in an unusually ugly or unseemly manner.

When suggestions from any subordinate are adopted, the credit should be passed on to him publicly.

When a subordinate has made a mistake, but not from any lack of good will, it is common sense to take the rap for him

rather than make him suffer doubly for his error.

An officer should not issue orders which he cannot enforce.

He should be as good as his word, at all times and in any circumstance.

He should promise nothing which he cannot make stick.

An officer should not work, looking over his men's shoulder, checking on every detail of what they are doing, and calling them to account at every furlong post. This maidenly attitude corrodes confidence and destroys initiative.

On the other hand, contact is necessary at all times. Particularly when men are doing long-term work or are operating in detachment at a remote point, they will become discouraged and will lose their sense of direction unless their superior looks in on them periodically, asks whether he can be of any help, and, so doing, gets them to open up and discuss the problem.

The Navy says, "It isn't courtesy to change the set of the sail within 30 minutes after relief of the watch." Applied to a command job, this means that it is a mistake for an officer, on taking a new post, to order sweeping changes affecting other men, in the belief that this will give him a reputation for action and firmness. The studying of the situation is the overture to the steadying of it. The story is told of Gen Curtis E. LeMay of the Air Force. Taking over the 21st Bomber Command in the Marianas, he faced the worried staff officers of his predecessor and said quietly, "You're all staying put. I assume you know your jobs or you wouldn't be here."

The identity of the officer with the gentleman should persist in his relations with men of all degree. In the routine of daily direction and disposition, and even in moments of exhortation, he had best bring courtesy to firmness. The finest officers that one has known are not occasional gentlemen, but in every circumstance: in commissioned company and, more importantly, in contact with those who have no recourse against arrogance.

The traditional wisdom of addressing Judy O'Grady with the same politeness as one would the Colonel's Lady applies equally in all situations in life where one is at arbitrary advantage in dealing with another. To press this unnecessarily is to sacrifice something of one's quality in the eyes of the onlooker. Besides, there is always the better way.

For this issue we received special permission to reprint one chapter from *The Armed Forces Officer* (Department of Defense, 1950). The selection was difficult: when a book is as uniformly well written and informative as this one, there is no single best chapter. Our choice is Chapter XXII, "Your Relationship With Your Men." We feel that every officer should have a personal copy of the entire book. Your copy may be obtained by writing: Book Department, The Infantry School, Ft. Benning, Ga. Price: $1.75.—Editor

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It takes the man with the rifle, the bayonet and the grenade, dragging his weary feet after him . . . to get in there with guts and brains. He has to put the finishing touches, the copper-riveted handiwork, on the craftsmanship of the air force, the artillery and the tank corps.

Lt Gen Lesley J. McNair

was it an AMBUSH?

capt merle g. sheffield

The general moved his finger from Fort Duquesne, where the map pictured the forks of the Ohio River. He pointed to the place where the Monongahela turned west again after bending to the north. "There, you say?" The scout nodded. His answer, in the mountaineer's twang, told the general what he wanted to know. "The water's slow, and the land's flat from there to the fort," he said.

The general turned to his second-in-command. "Colonel, we shall ford the river here, proceed along the west bank, and recross there." He indicated the spot which the scout had selected. "We shall then be about eight miles from the fort. Have Lieutenant Gage take a covering force to the opposite side on both fordings. The horses will be unable to pull the artillery over that hill in front of us, and we'd be in a hopeless position if we were attacked while confined on that narrow bank on this side of the river."

Major General Edward Braddock, commanding two regiments of British troops, with artillery and supplies, was

Fort Duquesne
Monongahela Battlefield
BRADDOCK'S CAMPAIGN
APRIL through JULY
1755
Monongahela River
Fort Necessity
PA.
MD.
Fort Cumberland
MD.
Potomac River
W. Va.
Frederick
Potomac River
Winchester
W. Va.
VA.
Shenandoah River
Alexandria
LEGEND
Line of march
State line

ving toward Fort Duquesne in July the year 1755. He had chosen to lead e expedition himself. Placed in com- nd of all British forces in America, e was determined to sweep the French ck to the St. Lawrence. He was con- dent that, with his red-coated regulars, e could capture the gateway to the west nd open the Ohio valley to the over- opulated English colonies.

British prestige, so important in secur- g the allegiance of the Indians of that erritory, would be re-established. Much f it had been lost when the French had iven off the British colonials who be- n the construction of a fort there. They ere commanded by George Washing- n, then a young major in the Virginia Iilitia. His loss of the key point, and is subsequent defeat at Fort Necessity, vere, in Braddock's opinion, perfect ex- mples of the ineffectiveness of the pro- incials. He despised them as soldiers and accepted Washington as a civilian ide-de-camp only because the young man new the country and the Indians. When Benjamin Franklin warned him that the ndian was an able antagonist, he re- lied, "These savages may, indeed, be a ormidable enemy to your raw Ameri- can militia, but upon the King's regular and disciplined troops, sir, it is impos- sible that they should make any im- pression."

He assembled his forces and left Fort Cumberland early in June.

His confidence in his regulars was such that he refused all offers of assistance from experienced frontiersmen. He half expected the French commander to sur- render rather than submit to a seige. In this he was not far wrong. Contrecoeur, as the British approached, was prepared to hand over the fort and march away with honor. That the battle took place at all was due to the persistence of his second-in-command, Beaujeu. This active leader had learned from the Indians that Braddock was to ford the river twice, and urged his commander to allow him to prepare an ambush at the second ford. He intended to delay the crossing for as long as possible, then fall back to the ravines which were near the road lead- ing to the fort.

Many historians have presumed that Braddock allowed his men to fall into this ambush. It was the most obvious explanation of the disaster which oc- curred two hundred years ago. An an- niversary is a time for looking back. As we review the action, it is well to remem- ber that battles are won as well as lost. The outcome may be determined by the competency of the victor as well as by any mistakes of the loser. We may find a more accurate explanation of the defeat.

The first clash with the French forces has been described by Douglas Southall Freeman, in volume two of his biography of George Washington, as a "meeting engagement, in that the opposing forces came together where neither expected to encounter the other." This came about through the hesitancy of the French commander in permitting the ambush, and that of the Indians in joining in the attack. Beaujeu had been granted the use of the French troops only if he could persuade the Indians to join him. The opportunity slipped by as they refused to take the risk. "How, my father," asked their chief, "are you so bent upon death that you would also sacrifice us? With our eight hundred men, do you ask us to attack four thousand English?" When a runner arrived with the news that the British had completed the crossing and were approaching the fort, the French- man leaped to his feet. "I am determined to go out against the enemy. I am certain of victory. What! Will you suffer your father to depart alone?" Six hundred and fifty Indians and the French regulars and militia raced through the forest and along the road. The fiery Beaujeu was

in the lead, the colorful fringes of his hunting shirt streaming as he ran.

They reached the broken ground near the ravines as the British column was sighted. Surprised to find the English so far advanced, the Frenchman halted and waved his hat to left and right. The Indians took cover in the woods along each side of the road, gliding behind rocks and trees, and disappearing into the ravines. The French, holding the center of the road, fired upon the advance detachment of the British. Lieutenant Gage's men returned their fire and advanced after a second French volley. This was answered by an English volley of

grape and musketry. Beaujeu and a dozen more fell dead upon the spot. The Indians, frightened by the roar and deadly effect of the volley, would have withdrawn had not the French troops stayed to hold the road. Shooting from their concealed positions with secure and steady aim, the Indians poured a terrible fire upon the exposed column. For a brief period, the ranks held firm, but precision of aim soon began to prevail over mere mechanical discipline. The English soldiers were being cut down by an enemy they could not see, and began to fall back.

Braddock, whose forces in the extreme rear had not yet left the river bank, heard the uproar at the head of the column. He ordered Colonel Burton to press forward with the rear guard. As the eight hundred, under a galling fire, were forming to attack, Gage's advance party withdrew, and the two regiments became hopelessly mingled. Braddock and his officers tried vainly to reorganize the men and lead them on in platoons. The men were, by now, confused and frightened. The mounted officers, easy marks in their distinguishing uniforms, were the constant target of the enemy and soon few were left to attempt any sort of organization. In the narrow road, the panic-stricken men hastily loaded and fired—often into the air. Many of their wild shots hit their own men.

Braddock moved from one rank to the next, forcing men into position with his own hands. His officers, hoping to set an example for the men, dismounted and advanced in platoons only to be cut down.

The British regulars, deprived of their immediate commanders, could not be brought to charge. The provincials, better skilled in wilderness fighting, tried to take cover, but Braddock cursed their cowardice and with the flat of his sword drove them back to the open road.

The artillerymen, with no clear targets, shot indiscriminately at puffs of smoke, killing many of their own flankers. Captain Waggoner of the Virginia Militia took eighty men to a position behind a large log on the brow of a hill. They opened a hot fire upon the enemy but the smoke of their first volley was

the signal for the mob in the road to pour a general discharge upon them. Fifty were killed, and those left had to abandon the position.

Braddock refused to yield, even when the whole column was subjected to the enemy fire. The supply of ammunition ran low, and the British fire had dwindled, but the disciplined soldiers had no thought of flight.

At last, when every aide but Washington had been struck down, and with but a third of the whole army still standing, Braddock ordered the drums to sound a retreat. Trained to stand fast in the face of enemy fire, the regulars lost all discipline when they turned to withdraw. An orderly retreat would have at least saved the wounded. As it was, they lay where they had fallen, to be scalped by the yelling savages who pursued the running mob. Many soldiers discarded weapons, gear and even clothing in an effort to reach the opposite side of the river. "They ran," said Washington, later, "as sheep pursued by dogs."

Braddock remained at what had been the head of the column. In the act of giving an order, he was struck by a ball which entered the lungs. He fell from his horse and lay helpless upon the ground. The soldiers could not be stopped to carry him from the field. Against his wish that he be allowed to die on the scene of his defeat, two of his officers undid his large sash, which they used as a stretcher, and placed him upon a wagon. A fresh horse was brought up, to which he was transferred, and removed to a place of safety.

The general, although mortally wounded, remained in command. He ordered the available men—about a hundred—to gather on a favorable spot to await reinforcements from Colonel Dunbar's supply camp. Washington had been sent there with suitable orders. The teamsters—Daniel Boone among them—had ridden away on the horses at the beginning of the battle, and one of them carried an exaggerated version of the disaster to Dunbar's camp. Many men deserted, and Washington had difficulty

in bringing back reinforcements. He found that the hundred men had deserted, leaving only the officers with the general.

Braddock lived until the 13th of July. He lay upon a soldier's bed in a wagon, as all that was left of his beaten army made its slow way back to Fort Cumberland. His deep silence indicated his despair. He broke it only to issue orders. Once or twice he was heard to mutter, "Who would have thought it?" His realization of his mistakes is evident in his dying words to his second-in-command. "We shall better know how to deal with them another time."

General Braddock was a brave soldier, and certainly, according to the standard of the school in which he had been educated, an accomplished officer. His error, if any may be ascribed to the

FIRST CONTACT
2 P.M. 9 JULY 1755
Allegheny R.
FORT DUQUESNE
Monongahela River
NARROWS
SECOND FORD
FIRST FORD
LEGEND
route of march
British scouts
Indians
0
1
2
3
miles

man himself, was his failure to obey the strictest law of nature—and warfare—"Adapt or Die!" He insisted upon the use of tactics which had brought him success in forty years of European military service, but which were unsuited to this wild, rugged country. The wars of Europe were fought on open battlefields, where the lines were clearly drawn. The tactics of that era were adopted to concentrate the fire of the Infantryman. They used the musket—a smoothbore piece having little accuracy. Fired in volleys, by men in close formation, it cut down whole ranks of the enemy. Victory was won by the side which withstood the enemy's volleys while advancing to occupy a tactically superior position. Soldiers fired only upon command, and iron discipline was necessary to keep the men in ranks. Bravery meant standing firm while facing enemy fire, and the men were not trained—or allowed—to use initiative. To leave the ranks and seek cover was an act of cowardice. Braddock and his officers tried to force the men to stay in rank, because they could fight in no other way.

In wilderness fighting, initiative allowed each man to take advantage of the terrain. The Frenchmen learned such tactics from the Indians. Braddock could hardly have been expected to learn them on the spot and a man of his rank and reputation could not ask—or accept—advice on warfare from the colonials. He had turned a deaf ear to Washington's suggestion that the provincials be allowed to use their frontier methods. The wilds of western Pennsylvania called for tactics radically different from those used in Flanders, but at this point in his career Braddock was not the man to foresee this difference.

J. F. C. Fuller, in his book *British Light Infantry in the 18th Century,* has this to say: "Braddock was not an incapable officer, as most historians paint him. He had taken every precaution against surprise. His only fault was that he attempted to carry out a system of tactics which ninety-nine out of every one hundred officers in Europe considered the *ne plus ultra* of perfection. If Frederick the Great himself had been in command of this British column, he could not have done more than Braddock did, and he would have suffered the same fate." According to Fuller, "Braddock's disaster on the wild banks of the Monongahela, due entirely to a lack of light Infantry and light Infantry tactics, was the first nail driven into the coffin of the Frederician system of war as applied to the British Army."

Braddock's successors in America learned much from the French victory. Lord George Howe, who was killed in the Ticonderoga campaign of 1758, learned skirmish tactics from Major Robert Rogers and taught them to the British Army. They were used in later victories which eventually drove the French from North America.

The victory of the French and Indians over Braddock's regulars was actually the triumph of a new concept of warfare. It was one of several battles which have become important in history because they marked definite changes in the use of men and weapons.

CAPT MERLE G. SHEFFIELD has spent much of his army career in schools. He graduated from the United States Military Academy in 1948 and attended the Army Ground General School before completing the Basic Course at TIS. He served as a platoon leader, company exec and battalion motor officer with the 26th Infantry Division in Germany from 1949-52. He spent the next two years with the ROTC Department at the University of Rhode Island. In 1954, he returned to The Infantry School and graduated from the Advanced Course and the Ranger Course. He is now studying nuclear physics at the University of Virginia under an army training program.

QUIZ

Answer the following questions to determine whether you are a bolo, recruit, marksman, sharpshooter or expert. Each question is worth 10 points.

1. A suitable aircraft for transporting troops and equipment into hastily prepared landing fields is the (select *one*):
   a. C-121.
   b. C-123.
   c. C-97.
   d. C-133.

2. How long should you wait before investigating an electrical misfire in military demolitions?
   a. Investigate immediately.
   b. Wait ten (10) minutes.
   c. Wait thirty (30) minutes.
   d. Wait forty-five (45) minutes.

3. Wheeled vehicles in the battalion receive three types of maintenance service. The driver accomplishes the "A" (daily) service and a mechanic accomplishes the "C" (1000 mile) service. Who supplies the "B" (bi-weekly) service?

4. After fording a vehicle, how can the driver quickly clear water from the brake lining?

5. A 60mm mortar with a base stake and four additional aiming stakes can cover a sector of fire of (select *one*):
   a. 300 mils.
   b. 600 mils.
   c. 900 mils.
   d. 1200 mils.

6. The tank commander notifies you that the gunner's telescope is shot out. Will he still be able to fire missions?

7. What are the five combat formations used by the rifle platoon?

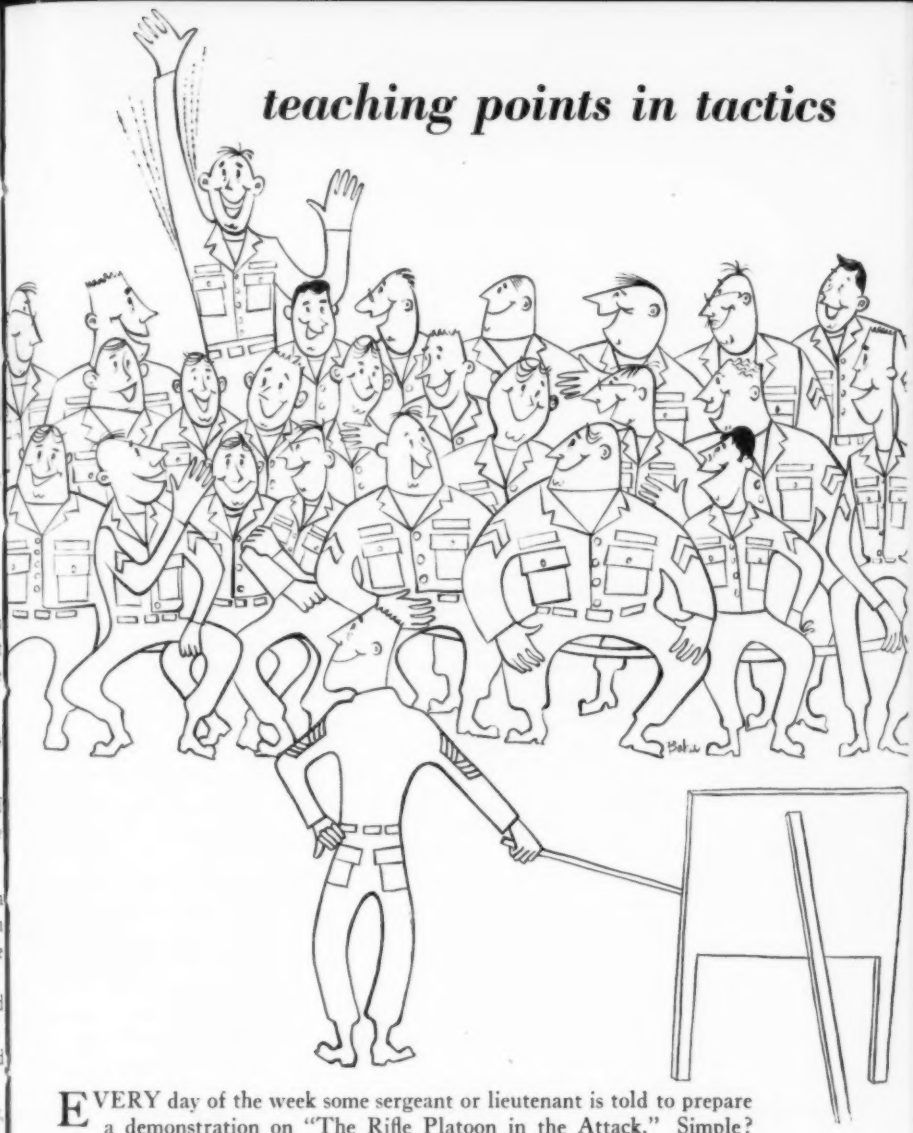
8. What is the difference between *final protective lines* and *final protective fires*?

9. Under the provisions of the Geneva Convention of 12 August 1949, a prisoner of war is required to give his captors only (select *one*):
   a. His surname, serial number and date of birth.
   b. His first names, surname and rank.
   c. His first names, surname, rank, serial number and date of birth.
   d. His first names, surname, rank and serial number.

10. What is the night training requirement for the Infantry battalion as prescribed by Department of the Army?

For answers see page 90.

teaching points in tactics



EVERY day of the week some sergeant or lieutenant is told to prepare a demonstration on "The Rifle Platoon in the Attack." Simple? It should be: small unit tactics are the Infantryman's stock in trade. Yet if you and I were to look in on the actual demonstrations, we would find such variations that we might wonder if all these soldiers were in the same army.

What is the improvement needed in small unit tactical training? It's not, as a rule, any increase in enthusiasm. Rather, it is a better under-

capt john h. van eaton

standing of the essential teaching points — the basic tactical principles — and their application in the thousand concrete details of an actual maneuver. The application varies with the circumstances, and this variation saves us from monotony in our teaching and our thinking—but the basic principles do not change. Let us run through a demonstration—first under ideal circumstances and then in a concrete, limiting situation—to show what those principles are and how they work.

1. SELECTION OF TERRAIN

In checking terrain for a demonstration, be sure that the class will be able to see all of the action that takes place. Avoid heavily wooded areas. Instead, use rolling hills covered with light vegetation. Whatever the terrain, the tactical problem does not change. The maneuver element must move along a route on which it can receive close support from the supporting fire element. The terrain should permit you to emphasize the use of organic and attached weapons to support the maneuver element (1) in its initial movement across the line of departure, (2) along the route of advance, (3) during the assault and (4) during the reorganization and consolidation. Thus, an area with three hills within the zone of action will be the best. The line of departure will cross one hill, and the objective is located on another hill 600-900 yards away, with an intermediate terrain feature (a small hill or ridge) 200-300 yards short of the objective. (See Figure 1.)

2. CHOOSING AN AVENUE OF APPROACH

In any terrain there will be two or three avenues of approach to the objective. Skeptics often argue that in any concrete tactical situation there are many ways an attack can be made and only the test of combat can prove which is the best. This is not true. There will be only a few good avenues of approach and one will be definitely the best. It is the one which allows maximum close support by the platoon's organic fire-support weapons throughout the attack. Although the support of other weapons along the route is an important consideration, the platoon's own weapons provide the most readily available fire. Choose the route which offers the best positions for these weapons—and be sure the class understands how you made your choice.

Your next consideration should be the length of time your platoon will be exposed to enemy fire. The more direct the route, the less this will probably be. However, in combat a straight line is not necessarily the safest distance between two points. Besides avoiding obstacles, your route must allow close coordination of the movements of the maneuver and support elements. Thus you should send the maneuver element to terrain features which will serve as weapons positions. It may also be necessary to clear the enemy from intermediate terrain features. Explain to your class that the platoon does not search out and pursue all enemy within its zone of action. We clear those terrain features occupied by the enemy, which will prevent accomplishment of our mission and those we wish to use for weapons positions. Positions which do not interfere with our mission are reported and bypassed. These may be neutralized by the platoon's supporting weapons or by calling for outside assistance. The platoon will close, however, with enemy forces met en route, attacking this resistance as it would an objective. The platoon leader will use his fire support to gain fire superiority and then maneuver his rifle squads to knock out the resistance. In your demonstration, place intermedi-

resistance at two points: one along the route requiring fire and maneuver tactics; another off the route to show the use of fire support in neutralizing resistance which is to be by-passed.

Stress the importance of cover and concealment. Of the two, cover is more desirable, as it screens the platoon from enemy observation and protects the men from enemy direct fire. Another advantage: the platoon may remain under friendly observation and thus receive more effective fire support. Although less desirable, concealment is better than

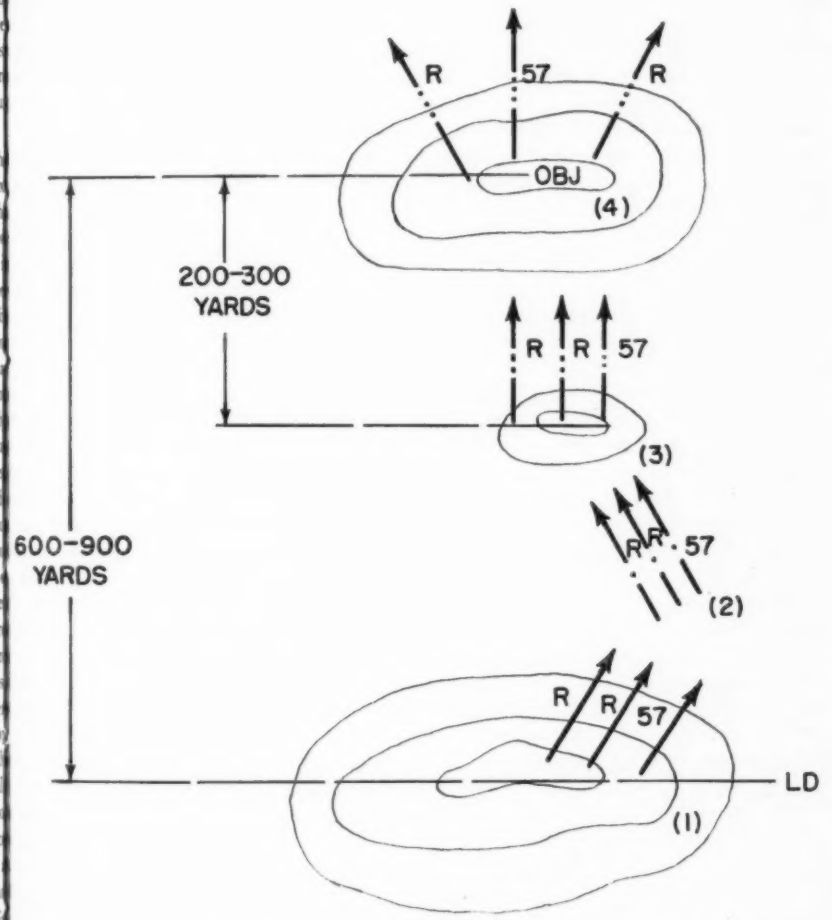


Figure 1. A desirable terrain layout to depict the employment of the organic and attached weapons of a rifle platoon; (1) initially, as the rifle squads cross the line of departure; (2) as the maneuver element advances along a route to the right; (3) during deployment into the assault position, and during the assault; (4) covering the reorganization and consolidation.

moving in the open. Of course, when neither cover nor concealment is available, smoke may be used to conceal the element's movement. Point out that it is better to move on the friendly side of advantage concealment than inside it. You will then have the advantages of being observed and covered by friendly weapons. In the demonstration do not allow your maneuver element to move any great distance through a concealed area. If possible, have them move with cover or concealment between them and the enemy. You can bring out a supplementary teaching point by smoking enemy positions as your element makes a short, exposed move somewhere along the route. The best opportunity is the deployment into the assault position.

3. CHOOSING AN ASSAULT POSITION

The avenue of approach must lead to the best possible assault position. There should be no obstacles beyond the assault position, and the slope should permit uninterrupted fire once the assault is launched. The position should provide room for the deployment of all three rifle squads on line. They should not have to make a lateral move in front of the objective in order to reach their positions. If the position is too narrow for three squads, keep the third under cover where it will be safe from fire directed against the assaulting squads. Select the assault position and plan your deployment before the attack. It should be as close to the objective as your own indirect fire will permit. The maneuver element "leans into its supporting fires." The minimum safety margin is four probable range errors. Thus, the attacking force will move to a line which is 120 yards from the target when supported by 4.2 inch mortars and 105mm artillery, and 80 or 60 yards, respectively, when covered by 81mm and 60mm mortars. The attackers will probably engage the enemy at the military crest of the objective. We can, therefore, locate the assault position 100 to 150 yards from the enemy position. Explain that as the attack progresses, the support weapons are "phased out" progressively. The fires of the heavier pieces shift as the maneuver element deploys into the assault position: the 81's as the assault is launched, and the 60's shortly thereafter. If these fires—or demolitions simulating them — are used in your demonstration, have them actually shifted to cover enemy avenues of approach to the position, and to deeper terrain features affording observation and fields of fire on the objective. If you omit discussion of supporting fires in explaining the location of the assault position, understand their significance so that you may answer any questions the class may ask.

4. THE USE OF SUPPORT FIRES

Supporting fires not under the control of the platoon leader are vital in combat, but they must be merely mentioned if you wish to keep your presentation simple. The procedure for requesting support fires and coordinating their lifting and shifting should be emphasized. These weapons assist the maneuver element by neutralizing enemy weapons hindering its advance (whose position has not been previously disclosed). They will also fire missions against known enemy positions upon the objective and throughout the zone of action before and during the assault. The platoon leader secures this support by calling the company commander, and giving him a "target designation"—the description and location of the target. The platoon leader is not responsible for choosing the weapon and directing its fire. He must, however, inform the company commander of his own progress, so that shifting of this fire

can be coordinated with the movement of the assault element. If friendly fires are not lifted soon enough, the attack will be delayed. If they are lifted too soon, the enemy will have a chance to man his weapons—perhaps just as the element deploys for the assault. Remember, though, that support fire must not distract the class's attention from the main subject of the presentation. Use this fire in the demonstration—or simulate it by demolitions—but limit the discussion to a brief explanation. Support fires play a major role in combat, but only a minor role in your presentation.

5. THE USE OF ORGANIC AND ATTACHED SUPPORT FIRES

Ideally, the weapons squad, and weapons attached to the platoon, should be in position on or near the line of departure at H-hour. They remain there as long as they can support the maneuver element effectively. Their mission is *close* fire support, watching the advance and engaging enemy weapons or strong points which attempt to delay it. Meanwhile, other weapons, controlled by higher headquarters, are probably concentrating on targets deeper in the objective area.

In order that the organic and attached weapons be in position to provide continuous close support, they should displace rapidly to the intermediate terrain feature before the maneuver element's deployment into the assault position. Opening fire from their new position as the maneuver element deploys, they overlap the fire of heavier weapons which will lift or shift as the assault line approaches the safety limit of the various weapons. Point out that neither the supporting nor the organic weapons fires lift on schedule. Both continue to fire until masked by the advance of the troops. The platoon's support weapons then move rapidly to the objective, to

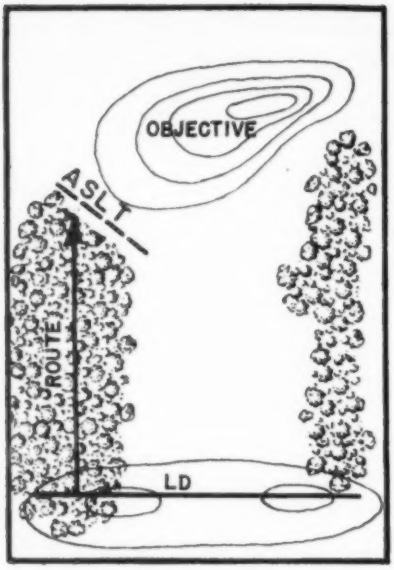
Preparing a tactical problem like "The Rifle Platoon in the Attack" involves a multitude of details. CAPT JOHN H. VAN EATON puts the emphasis on detail as he describes the proper method of presenting this problem.

Capt Van Eaton received an OCS commission in 1945. In Korea he was a company CO and a liaison officer with the 9th Infantry Division. Before his present assignment to the 373d Armored Infantry Battalion, he was a member of the Tactical Department, TIS.

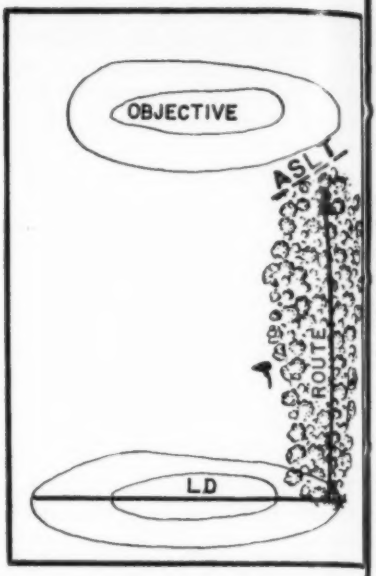
assist in reorganization and consolidation. This displacement is executed in team echelon—one gun moving out even before its fire is masked. Preplan the disposition of these weapons on the objective prior to the attack, placing them to cover the most dangerous avenues of counter-attack. (See Figures 2-5.)

Clarify the difference between organic and attached weapons for the benefit of the observers. Explain that "attached" usually refers to a 57mm recoilless rifle. One is usually attached to each attacking rifle platoon, whose leader plans its employment. The best technique is frequent displacement along the route of advance, overwatching the maneuver element. Its sensitive fuze necessitates its emplacement near the maneuver element, to assure clear fields of fire as it fires upon targets in close support of friendly troops. This nearness enables the platoon leader to designate targets by voice or hand signals. These are the only means of communication, since the section has but one radio.

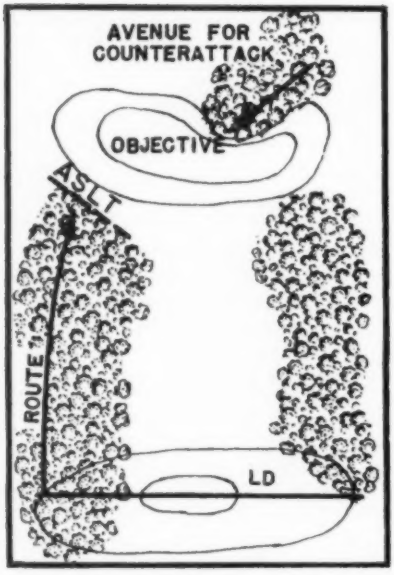
Sometimes a 60mm mortar will be attached to the rifle platoon. It will be used when the section OP is unable to observe and adjust fire along the platoon's route of advance. As an attached weapon, the mortar advances "by bounds." When it occupies a position which affords only mask clearance, reconnaissance is initiated immediately to locate the next firing position. The squad



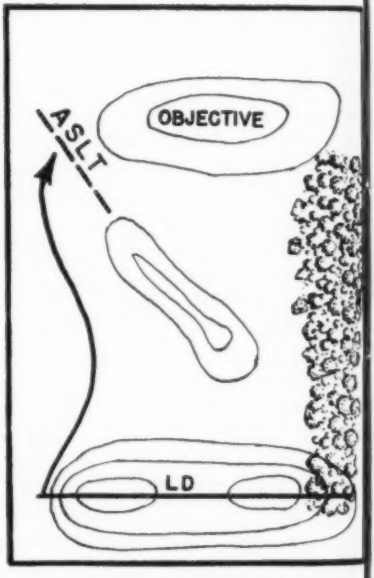
Assault fixes route.



Route fixes assault.



Cover available fixes route.



Avenue for counterattack fixes assault.

Figures 2-5.

leader, acting as observer, may well be forward of the gun position, visible to the gunners and able to observe the maneuver element. Thus, the weapon can shift its fire from one position, moving only in infrequent "bounds."

Do not allow the 60mm mortar to distract the attention of your class. However, if the terrain requires one, you might use it as a hand held mortar. This allows the squad to carry slightly more ammunition and the mortar can reach targets in defilade besides its direct-fire capability.

6. FORMATIONS

The class should pay special attention to formations used in the approach and the assault. Identify each squad and explain the reasons for the formations it employs.

The attached weapons will be in position or displacing under the squad leader's control. We are concerned only with the rifle elements. The attacking force should use the formation which permits the most rapid movement consistent with flexibility and security from enemy attack. On the terrain which has been suggested, a column should be best —at least initially. It is easily controlled, and only one squad will be committed if resistance is encountered. Two other formations may be used. One, the wedge, is preferred if the enemy situation is unknown and the threat can come from any direction. The wedge affords prompt and heavy fire power to the front or either flank. But it is difficult to control since its all-around security depends upon all three squads keeping their proper relative position. The other formation is the echelon. This is feasible if you have protection, such as a friendly unit or an obstacle on one flank. Attention can then be concentrated on the threat on the other flank. Controlling the echelon is difficult, for again, security depends on maintaining proper position. These formations, which are hard to control, are also slower because of the jockeying necessary to keep them in shape. When the distance is short and the enemy is known to be to the front, the vee formation is practical. It is the most likely choice for moving from final cover to the assault position. Also, it is the easiest to deploy into a line. The vee is harder to control than the column since the two lead elements must keep abreast to maintain its special advantage of heavy fire power to the front. The hardest of all to control is the formation which offers the heaviest firepower to the front and is, therefore, used in the assault. This is the platoon line, with squads as skirmishers. Your terrain might permit a covered or concealed move right to the assault position, and this would be most desirable of all. Of course, the maneuver element will take advantage of any cover and concealment available as it deploys for the assault, but remember that cover is not your most important consideration. It is the support of the indirect fires which is the most important factor in the choice of the assault position.

7. THE ASSAULT

The assault should be effected in closest coordination with direct fire support weapons. The gunners—or the leaders—of these weapons observe the advance of the maneuver element. Like the observers of the indirect fire weapons, they estimate the point of farthest safe advance. As the assault lines approach this limit, the gunners shift their fires on their own initiative. This differs from the shifting of indirect fire, which is coordinated by the company commander.

As the riflemen deploy into the assault position, they open fire upon targets in the objective. (This is not true when we are trying to save ammunition or surprise the enemy.) This fire overlaps

that of the support weapons, keeping the enemy under constant pressure while support fires lift and the full fire load is transferred to the assault element. As the squads deploy, the leaders see that their men fix bayonets and fire upon the proper targets. Each individual will move in the direction in which he is firing, so the best way to start him in the right direction is to see that he is firing on the right target. The squad leader must be sure that no two men attack the same target. A few such duplications can mean an ineffective squad. When they are satisfied, squad leaders signal "Ready" to the platoon leader and watch for his signal to launch the assault. He coordinates his signal with the company commander by radio or pyrotechnics. During the assault, the line moves at a rapid walk, the riflemen pausing every two or three steps to squeeze off well-aimed shots. AR men fire frequent short bursts. Squad leaders and their assistants control the direction and speed of their men by physical contact, and the platoon leader uses the platoon sergeant and his assistant to control the squad leaders. As the line approaches within 30 or 35 yards of the enemy positions, the men fire from the hip as they close in. The assault carries through the enemy position. It is characterized throughout by volume, violence and accuracy of fire. Encourage plenty of "sound and fury" during this vital phase of your demonstration.

8. CONSOLIDATION ON THE OBJECTIVE

This is a very important point which is often slighted in teaching small unit tactics. Emphasize that the attacking force may have become "loose" during the assault. After the attack is carried all the way through the enemy defenses, it should be reorganized immediately to repel a possible counter-attack. Good planning will bring the attackers into position facing the most dangerous avenue of approach. Your weapons should then be placed where they will have good fields of fire. Meanwhile, ammunition is redistributed and key personnel are reassigned when casualties have occurred. As soon as possible after the immediate defense is set up, the platoon leader receives reports from his subordinates and gives his own status report to the company commander.

Here is another chance to make a good teaching point. Evacuate an AR man as a casualty, and assign his weapon to a rifleman. If this cannot be seen by the observers, indicate it in a radio report from the platoon leader to the company commander.

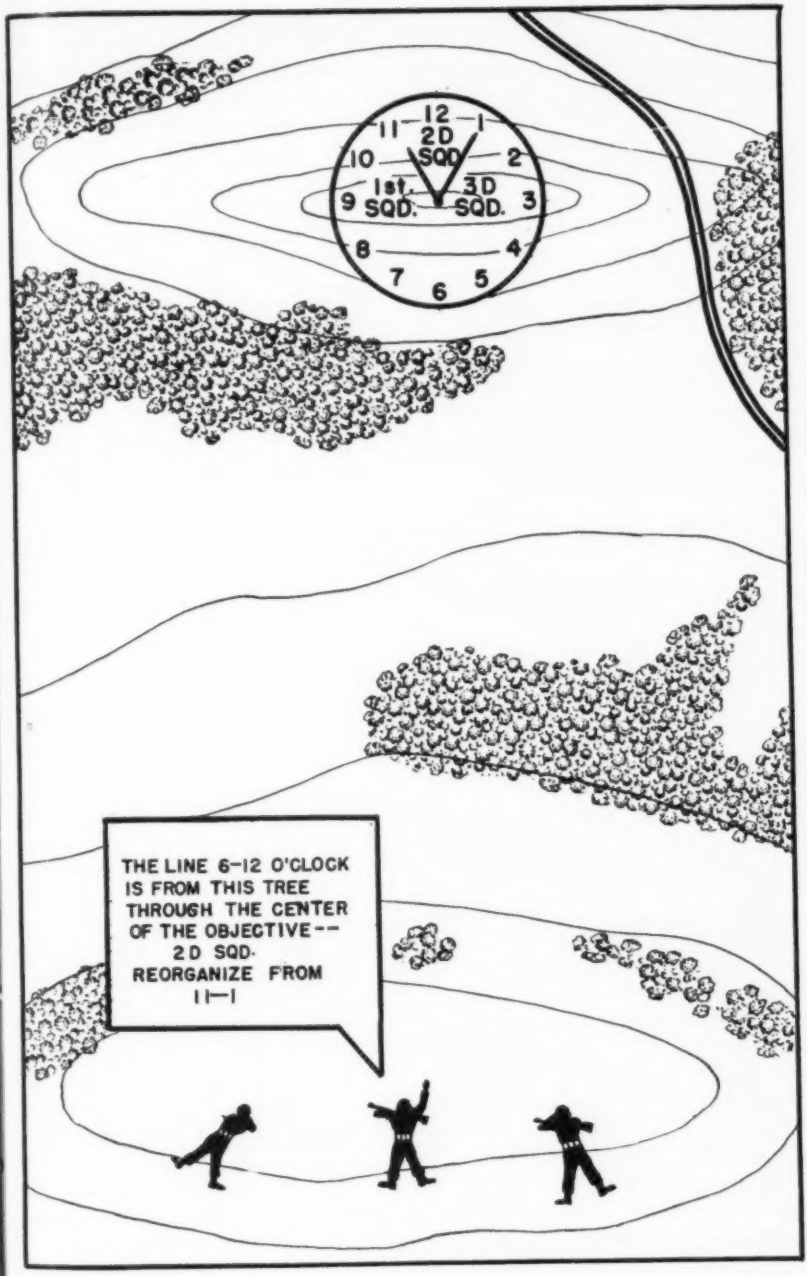
Your demonstration should bring out the following points: (1) The reorganization and consolidation should always be preplanned. The location of squads and weapons and of the supporting fires are designated before the attack. (2) If personal reconnaissance on the objective is possible, plans can be made much farther ahead. Any necessary adjustments in such long-range plans can be quickly made. (3) In designating sectors of responsibility to the leaders, use outstanding terrain features for reference. If this is impossible, use the clock system. Indicate the line from 6 to 12 o'clock on the ground, alining it with prominent terrain features. (See Figure 6.)

9. CONDUCT OF THE ATTACK

a. The Actual Demonstration

"All this theory is mighty fine," you argue, "but where am I if I don't have terrain which will allow all the weapons and the maneuver element to be employed in the most desirable way?" You may be helped by the solution to a problem like that in Figure 7. Enemy posi-

Figure 6. The clock system may be used as an alternate method of designating areas for reorganization and consolidation.


12
1
11
2D
SQD
10
2
1st.
3D
9
SQD.
SQD.
3
8
4
7
6
5
THE LINE 6-12 O'CLOCK IS FROM THIS TREE THROUGH THE CENTER OF THE OBJECTIVE -- 2D SQD. REORGANIZE FROM 11-1

tions are known to be on hills C, K, F and J. A friendly platoon occupies Hill A, and adjacent units are attempting to seize Hills J and K. The enemy on Hill C is estimated at one reinforced rifle squad. The woods restrict observation to about 150 yards, and the average height of the trees is 20 feet. The open areas are covered with knee-high grass and brush, and broken by washes and folds in the ground. The platoon, whose mission is to seize Hill C, has an attached 57 mm rifle. The weapons of higher commanders—some located on Hill A—will lend support as required, but the leader of the rifle platoon must plan his own close fire support for the maneuver.

b. The Initial Employment of Weapons

Since he has chosen a route which affords concealment initially, he is unable to position all of his supporting weapons at the outset. As he crosses the line of departure in a wedge formation, he has one machine gun in position to cover the maneuver element as it emerges to clear Hill B. Note that the other machine gun and the 57mm rifle accompany the platoon to be used for resistance met in the woods or to the right flank. These weapons are positioned at the edge of the woods to support the clearing of Hill B. Why is the platoon leader going to seize Hill B? Of course, the enemy may be there, but that is not the main reason. He wants to use the hill as a position for his supporting weapons. As the squad moves up Hill B, the other two squads secure its rear and right flank. The hill itself provides cover against enemy fire from Hill C. The squad deploys and the weapons are placed to engage the enemy if he is found there.

c. Support During Maneuver

As soon as their fields of fire are masked by the advance of the squad, the support weapons advance to Hill B. As the first weapons arrive, the rifle squad rejoins the maneuver element, still using the hill as cover from Hill C, and falling in as the trail squad in a platoon vee formation advancing to the assault position.

d. Support During Assault

Upon deployment into the assault position, the right-most squad is going to be the most exposed. The last squad on line will come into that position. It is usually best to assault on a line at right angles to the supporting fires so that they will lead the maneuver element right across the objective, shifting their fire ahead of the advance. That is not feasible here, however. The platoon leader has good reasons for picking this particular assault position. It provides cover from other enemy-occupied areas. If the assault were made from the area of either G or H, Hill F would have flanking fire on the assault line. Our own close support weapons would be unable to pour direct fire upon targets there. There are no positions from which the element could receive support should the enemy be encountered well down the slope. The present position enables our close support weapons to provide overhead fire during the deployment and launching of the assault.

e. Employment of the Rocket Launcher

All during the advance, the 3.5 inch rocket launcher moves in the formation near the platoon leader—where he can control it easily and employ it quickly against any tank threat which appears. During the assault, the 3.5 follows by about 30 or 35 yards behind the line. It is then out of the way of platoon and squad leaders, yet is readily available.

f. Use of Grenades

The hand grenades carried by the riflemen are useful in mopping up small pockets of enemy resistance. Rifle grenades, and hand grenades used with the

firing adapter, will be effective after supporting fires have shifted forward and before the riflemen come within hand grenade range.

g. Reorganization and Consolidation

The riflemen close in with grenades and bayonet. The squads move immedi-

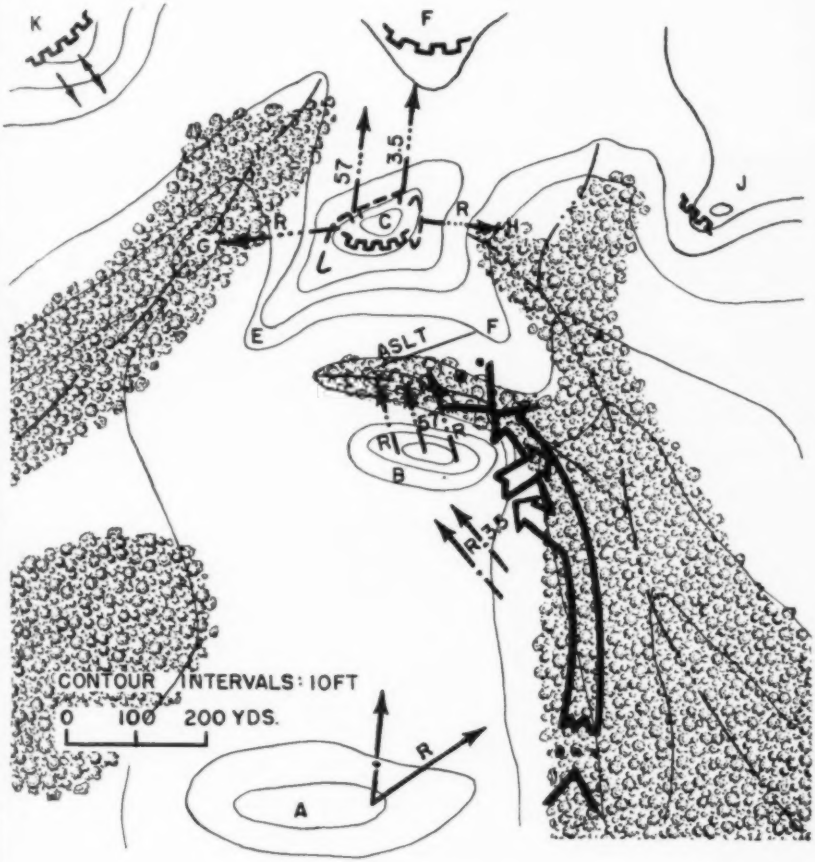


Figure 7

ately to previously assigned positions on the objective, with the two flank squads covering the most dangerous avenues of counter-attack, H and G. The weapons from Hill B quickly displace to the objective as does the 57mm rifle as soon as its fire is masked by the advance of friendly troops. The light machine guns execute team echelon displacement: as their fires are about to be masked, the weapon in the poorer position displaces, in an endeavor to reach the objective quickly. The remaining gun stays in position as long as it is able to provide effective support. Both guns take positions on the objective commanding the dangerous avenues of Infantry approach. The 57mm rifle now covers the open area, and can be quickly shifted to cover the approach from G. The rocket launcher is sited to cover the most dangerous avenue of armored approach. Note that the machine guns can be quickly shifted to fire in the direction of Hill F.

If it is to remain on Hill C, the platoon will continue to prepare a position and better its defense. If the attack is to push forward, the leader rapidly plans further moves, while resupply and evacuation of casualties and prisoners are effected.

10. SUMMARY

Summarize your demonstration for the benefit of the class. They have seen much that interested them, but the spoken word will clarify many things which they may have missed or only half understood. They have viewed the demonstration as a series of events. Use your summary to tie the whole thing up in a neat package which each will take away with him and think about.

Through your summary, make these events the illustrations of sound tactical principles. Emphasize the following points:

1. The use of fire and maneuver.
2. The use of fire support to achieve fire superiority.
3. The use of cover and concealment.
4. Rapid movement in appropriate formations along a direct route.
5. The capture or neutralization of critical terrain en route to the objective, while still conserving effort for the assault.
6. The execution of a short, controlled attack.
7. The consolidation of gains, stressing prompt displacement of supporting weapons and continuous fire planning; deployment and continuous reorganization of the maneuver element to meet any counterattack; and the immediate and constant improvement of newly won positions.

Be sure to impress on your class the importance of fire support. Too often an attack is launched before adequate fire support has been prepared. The unit so committed, depending too much on small arms and organic weapons, will execute a slow, costly maneuver. Here lies the difference between haste and speed. More time in preparation means less time in combat—and fewer casualties as well.

The orderly performance of these seven points is the key to success. Observe them in your demonstration—emphasize them in your summary—and your classes will be the models for future field problems—and future victories.

I am not a bit anxious about my battles. If I am anxious I don't fight them. I wait until I am ready.

Viscount Montgomery

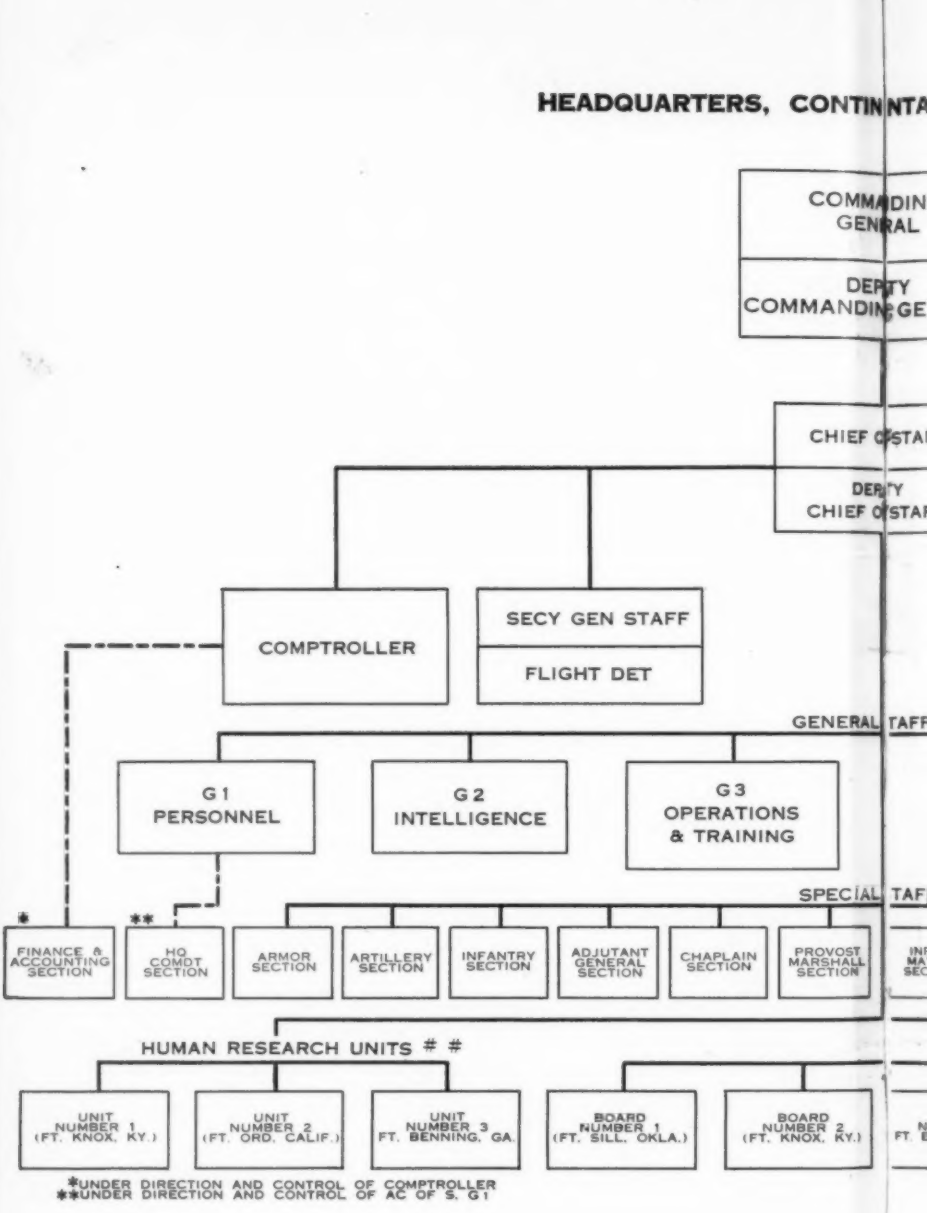
The Infantry Has a New Voice. Here's the Inside Story by the Official Spokesman . .

MAJOR GENERAL A. D. MEAD

INFANTRY SPEAKS UP

The Offices of the Chiefs of Arms in the War Department were dissolved in March 1942. Since that date, there has been a hue and cry throughout the army that no one is looking out for the combat arms. Attempts to reestablish the Chiefs of Arms Offices at Department of the Army level have failed—and perhaps rightly so. But the Commanding General, Continental Army Command (CONARC) has recognized a need for such agencies, and he has done something about it.

On 15 November 1954, three separate Special Staff Sections for Infantry,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COMMANDIN GENRAL
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COMPTROLLER
SECY GEN STAFF
FLIGHT DET
GENERAL TAFF
G1 PERSONNEL
G2 INTELLIGENCE
G3 OPERATIONS & TRAINING
SPECIAL TAFF
*
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FINANCE & ACCOUNTING SECTION
HQ COMDT SECTION
ARMOR SECTION
ARTILLERY SECTION
INFANTRY SECTION
ADJUTANT GENERAL SECTION
CHAPLAIN SECTION
PROVOST MARSHALL SECTION
HUMAN RESEARCH UNITS # #
UNIT NUMBER 1 (FT. KNOX, KY.)
UNIT NUMBER 2 (FT. ORD, CALIF.)
UNIT NUMBER 3 FT. BENNING, GA.
BOARD NUMBER 1 (FT. SILL, OKLA.)
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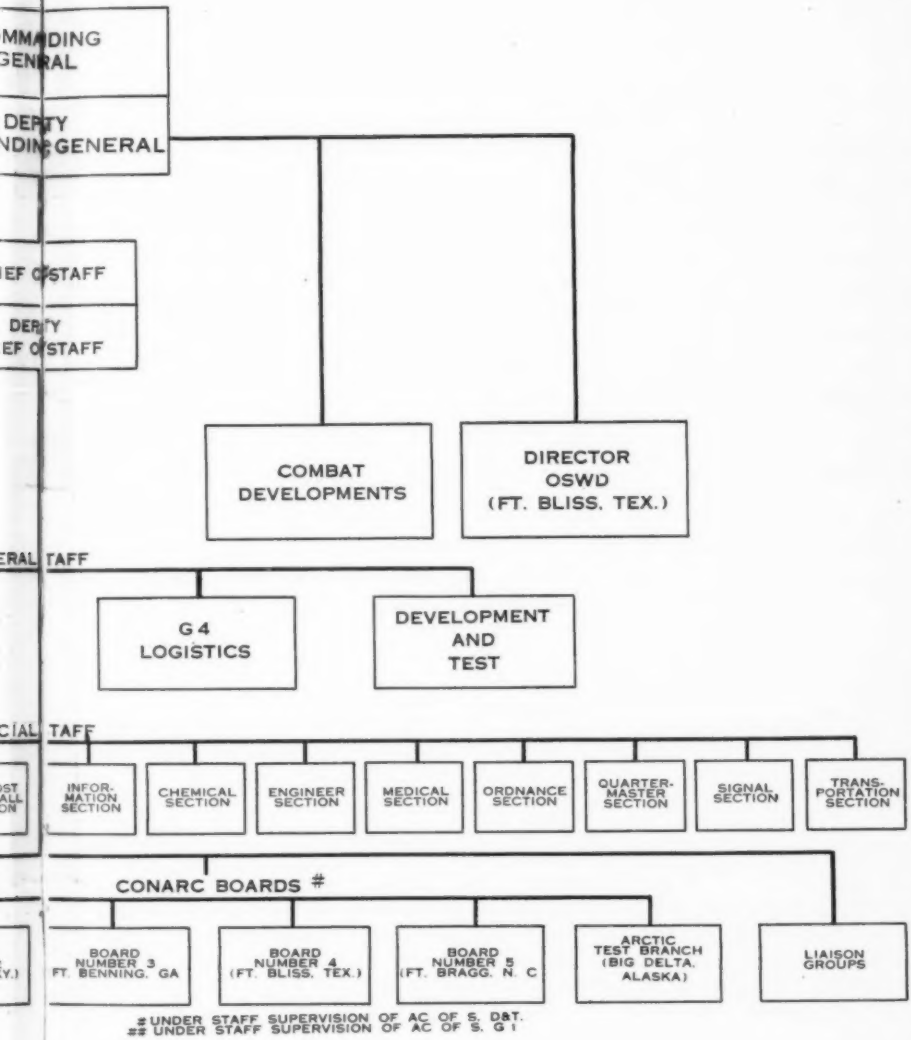
NTINNTAL ARMY COMMAND



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UNDER STAFF SUPERVISION OF AC OF S, G I

Armor and Artillery were established within the Office, Chief of Army Field Forces (now CONARC). The appointment of major generals to head each staff section shows the importance which the Commanding General, CONARC attaches to these agencies. True, this step did not come close to a reconstitution of the Chiefs of Arms Offices at departmental level, but it created staff agencies at a high level where none have existed since 1942—agencies designed to speak up for the *over-all* interests of the combat arms.

Typical of the missions and functions of the Arms Sections are those of the Infantry Section, CONARC. The Chief of the Infantry Section is responsible to the Commanding General, CONARC for advice on all matters pertaining to Infantry. These responsibilities include evaluating the state of training and degree of operational readiness of individuals and units; determining Infantry doctrine, tactics, techniques and organization; training of individuals and units; requirements for improvement of materiel; and reviewing, in coordination with other CONARC staff sections, all other matters pertaining to the Infantry.

PRIMARY FUNCTIONS OF COMMANDING GENERAL, CONARC

COMMAND OF	SIX CONUS ARMIES & MDW
RESPONSIBLE TO C/S FOR	
DEVELOPMENT OF	DOCTRINE, TACTICS & TECHNIQUES
DEVELOPMENT OF	WEAPONS & EQUIPMENT
PREPARATION OF	INSTRUCTIONAL MATERIAL
TEACHING OF	TACTICAL, ADMINISTRATIVE, INTELLIGENCE, AND LOGISTICAL DOCTRINES AND TECHNIQUES
TESTING OF	DOCTRINE, TECHNIQUES, ORGANIZATION, WEAPONS, EQUIPMENT & MATERIAL
TRAINING WITHIN CONUS	IN ALL ASPECTS TO MEET DA TRAINING OBJECTIVES
PREPARATION & EXECUTION OF	PLANS FOR GROUND DEFENSE OF CONUS
PREPARATION OF	PLANS FOR DISASTER RELIEF AND CONTROL OF DOMESTIC DISTURBANCES

Since one of CONARC's primary responsibilities is the training and preparedness of all Infantry in the continental United States, and since practically all activities of CONARC and the army as a whole revolve around the Infantry, this section is a vital cog in the CONARC organization.

An integral part of the Infantry Section's work is constant surveillance and review of Infantry training. Inspections of CONUS units and review of field reports determine the status of training of all units and individuals. Training is improved, where necessary, by revision of Army Training Programs, Army

Training Tests, training literature and training ammunition allowances. Evaluating Infantry training facilities, establishing requirements for appropriate training aids and recommending their procurement and distribution results in better Infantry training.

CONARC's Infantry Section and The Infantry School coordinate closely in school training of officers and enlisted men. CONARC reviews the Programs of Instruction prepared by TIS to insure their adequacy and timeliness. Staff actions of other CONARC staff sections directed to The Infantry School are coordinated with the Infantry Section. In short, this Special Staff Section assists The Infantry School in achieving a common purpose—the continued production of the best-trained Infantrymen in the world!

To further its training mission, the Infantry Section sponsors a number of research projects, which are conducted by CONARC Human Research Units. One such project is **Task Trainfire.** Its purpose is to develop a practical course of rifle marksmanship instruction which will prepare the soldier to use his rifle effectively in combat. One phase of this experiment, for example, substitutes a realistic "battlefield" target for the conventional bull's-eye types. **Trainfire** experiments to date show promise of reducing the amount of time required for preliminary rifle marksmanship training, while improving the quality of firing.

Another Human Research Unit task, sponsored by the Infantry Section is **Moonlight.** Its purpose is to develop improved methods of training Infantrymen to fight at night. Portions of this project dealing with night firing of the M1 rifle without artificial illumination have already been incorporated in army training. Other portions of **Moonlight** are in progress. They seek movement and control of groups at night, and night marksmanship with other weapons.

To meet the challenge of two-sided atomic warfare, development of effective organization and doctrine for the Infantry is of utmost urgency. The Infantry Section has the all-important job of reviewing and revising existing organization, doctrine, tactics and techniques of the Infantry. Recently, this section participated in the planning and review of **Exercise Follow Me.** This exercise tested certain tactical concepts and modifications of the organization and equipment of an Infantry division. The evaluation of the test results and the application of findings are expected to lead to important changes in tactical doctrine and Tables of Organization and Equipment of Infantry units.

In the fields of product improvement, the Infantry Section endeavors to eliminate deficiencies, improve operation or characteristics, reduce the weight and increase the quality of all Infantry weapons and equipment. At present, the Infantry Section is actively participating in several development programs which include a light-weight rifle, an all-purpose machine gun, flame equipment, armored personnel carriers, Infantry vehicles, improved mines and improved ammunition.

The Infantry Section also makes recommendations on allocation of critical items of Infantry supplies, equipment and ammunition. New techniques and new doctrines are studied and evaluated to determine those procedures which will help keep the Infantry properly clothed, housed, fed and armed. To determine actual requirements and procedures, staff visits to troop units, participation in field exercises and maneuvers and attendance at tests and demonstrations are all part of a day's work. Current projects include a review of Class III resupply proce-

dures, revised allocations of certain training ammunition, improvement of design and function of clothing and equipment and a major study concerning elimination or reduction in numbers of Infantry items from the supply system.

By staff visits and close liaison with appropriate Army Technical Services, the section keeps informed about the latest developments in the maintenance field. Where deficiencies are noted, recommendations are made for their correction and procedures suggested to prevent their recurrence.

As the over-all strength of the army is reduced, every effort is made to achieve maximum utilization of Infantry personnel. The impact of such pressure on the morale of the individual Infantry soldier and the prestige and esprit of Infantry units is carefully studied. The new specialist program, changed MOS structure and personnel procedures evolving from **Gyroscope** are of extreme significance. By staff visits and analysis of these policies and procedures, the Infantry Section assists other staff sections in insuring that the interests of Infantry units are adequately served. Though these important functions affect the personnel field, it must be clearly understood that none of the functions of the Career Management Division of The Adjutant General's Office, or of G1, have been transferred to the Infantry Section, CONARC.

Production of the best trained, organized and equipped Infantry has always been an objective of military commanders. The advent of nuclear warfare on the battlefield, and the numerical superiority of our potential enemy make it essential that the United States Army accomplish this objective. This task is too big for any one organization. It requires the complete cooperation of every individual and every agency concerned with the US Army and its Infantry. The establishment of the Combat Arms Sections at CONARC is only one step, but it is a decided step in the right direction —towards producing the world's best fighting men and supporting them as they deserve.

MAJOR GENERAL ARMISTEAD D. MEAD was commissioned in the Infantry (USMA, 1924) and has served as an Infantry officer during most of his career. As Chief of Infantry, Headquarters, Continental Army Command, he is the foremost spokesman for the Infantry.

General Mead served in both the South Pacific and Europe during World War II. In Korea, he served with the 3d Infantry Division as Assistant Commander.

PERSHING . . . ON TRAINING

The importance of well-trained Infantry as the prime essential to military success can hardly be overestimated. Infantry capable of meeting the requirements of modern war can be created only by the most painstaking and intelligent instruction of the individual in all that pertains to the duties of the soldier. The neglect of any phase of his training may cause disaster.

General John J. Pershing

intelligence training test

MAJ JOSEPH HRANICKA

HOW effective is intelligence training in your unit? How much do your men actually retain? These are questions of the first importance for all commanders. To find the answers—try a realistic performance test.

Here is an intelligence performance course which trains as well as tests. With modifications, you can use it for a variety of military subjects. On the next two pages, you will find a chart of the 10 stations, and a station-by-station account of the action that follows.

Stations (numbers correspond to those listed on the chart):

1. Here the man being tested is told that he is a patrol leader. He is given a sketch showing several aggressor soldiers erecting a wire barrier. He is told that he is witnessing this action to his front through binoculars.

The grader in charge of the station permits the man to see the sketch for only one minute. The man is then required to make an oral report to the grader telling him precisely what he saw.

2. At this station the man is required to give a written report on the sketch he has just seen at the previous station. The object is to test his memory and his ability to make a concise, factual report.

3. The man is shown a silhouette sketch of an armored vehicle. At the end

1. Observation and oral report from sketch.
2. Observation and written report from sketch.
3. Recognition and reporting from silhouette sketch.
4. Recognition. Processing POW's and reporting.
5. Recognition and reporting.
6. Memory Test.
7. Observation. Handling captured
8. Observation. Written report of
9. Range estimation. Observation and
10. Range estimation and oral report.

of one minute, the sketch is covered, and he is required to give a correct oral report of what he saw.

4. Between stations three and four, the man being tested "finds" an aggressor in a wooded area. He is expected to capture, disarm and search the aggressor—and turn him over (as a POW) to the grader at station four. The grader then questions the soldier regarding the proper procedures for reporting and processing POWs. At the conclusion of this phase, the grader directs him to take the POW to battalion (the next station).

5. At this station the man is queried about the location in which he found the POW. He is also required to give the grader a list of all of the items found on the aggressor. (Several items—such as a map showing the location of an aggressor unit—should be skillfully hidden on the aggressor's person.) The aggressor is then searched by the grader. If he "discovers" something the man under test has missed, he down grades him accordingly.

6. This is a memory test. Approximately forty items—for example: a pistol, aggressor helmet, pencil, note pad, etc.—are concealed by a blanket. The blanket is removed for 30 seconds and then replaced. The man must write down each item that he remembers seeing.

7. At this station the soldier is informed that the aggressors have just withdrawn to a new position. There are several foxholes in the area. On the parapet of one is a cartridge belt, and at the bottom of the other, a document. He must find each, turn them over to the grader, and make an oral report.

8. Here the man sees two aggressors carrying a light machine gun over a bridge. He is required to make a written report on what he sees and give the location of their position. He is also required to locate several objects (these can be tank silhouettes, etc.) on a map.

IN this article, MAJOR HRANICKA (ROTC, Johns Hopkins University, 1948) offers a practical approach to intelligence training. For background material, he has drawn on his WW II experience as a battalion S2 as well as his more recent duty with the Intelligence Committee, Staff Department, TIS. The author is currently with the Combat Developments Office, TIS.

9. In the distance, the soldier (using binoculars) will see two aggressors and a heavy machine gun. He must estimate the range to their location and prepare a short written report on his observation.

10. Two targets (in a foxhole) are located approximately 500 yards from this station. The man is expected to estimate the range to this position and make an oral report.

Scoring. Each station should have a score value of 100 points (1000 for entire course). The minimum passing grade should be 700 points or 70 per cent of the course total. The 100 points possible at each station can be broken down as desired by the instructor in charge.

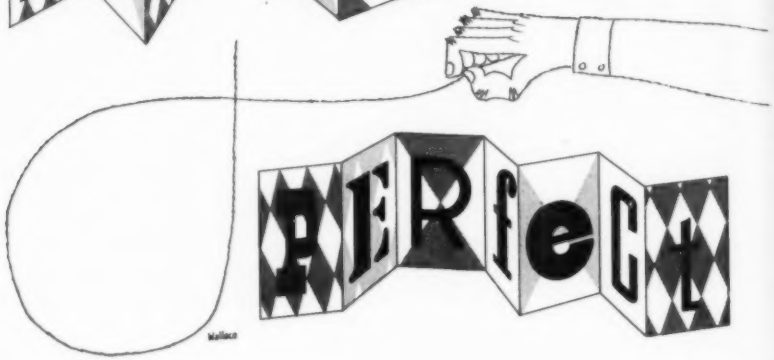
Records. Each grader should be furnished a roster listing the names of each man being tested. He will enter the grade received at his station on this roster. The individual's entire score can then be computed easily and accurately at the conclusion of the test.

Critique. After the scores are computed there should be an overall critique. Each grader should point out the common failings observed at his station. All questions pertaining to the test should be answered at this time.

There's no limit to what can be done with a performance test of this type. With imagination and a little ingenuity, I'll bet you can increase its effectiveness materially. One thing is certain, it will provide an excellent picture of the strengths and weaknesses of the intelligence training program in your unit. The rest is up to you.

LETTER PERFECT

MAJ MARCUS N. GEWINNER



YOU know the story. There I was with a class to teach and no charts, no crayons, no chalks and no commercial lettering pen. In a case like this there could be only one solution. I had to find a "gimmick." The result? An expedient that uses any ink, produces a continuous ⅜ inch wide line for a distance of 14 inches, and produces Gothic or Roman lettering as well as thick and thin script lettering. Like almost all such "gimmicks," this expedient lettering pen came into being through necessity.

Difficult to construct? Not at all — but first examine the materials you need.

1. One salvaged retaining clip from a salvaged helmet liner band.

2. One 10 or 12 penny nail (can be an old one) or similar piece of wood or pen staff.

3. One piece of wire (or cord) 12 inches long.

4. A cutting file or hack saw blade.

Next, let's consider the actual construction:

1. Remove salvaged retaining clip from salvaged band (see Figure 1).

2. Press open ends of the clip together until they are fastened securely.

3. Press or hammer flat surface of the clip (*not* the two rounded ends) until it is not less than $\frac{1}{16}$ inch thick nor more than $\frac{1}{8}$ inch thick.

4. Saw or file a narrow notch not more than $\frac{1}{32}$ inch wide in the exact center of the rounded end of the clip. This notch must be deep enough to go through the thickness of the metal.

THE author has taken an idea, added his know-how and come up with a new field expedient. An Infantry OCS graduate (July 1941), MAJOR MARCUS N. GEWINNER served with the 158th Bushmaster Regiment in the Philippines during WW II. During the Korean conflict he fought with the 40th Division. He is now an instructor in the Ranger Department, TIS.

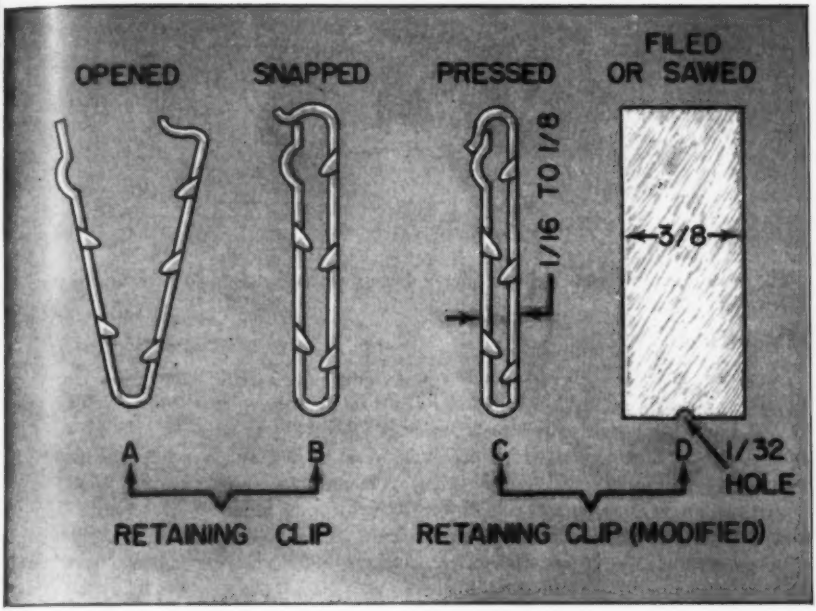


Figure 1

5. Fasten the modified clip securely to a 10 or 12 penny nail or a piece of metal of similar size (see Figure 2).

Here's how to use the pen:

1. Dip into ink until the tip of pen is ½ to ¾ inch covered.

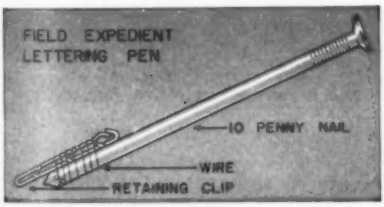


Figure 2

2. Place on writing surface — pause a moment — then proceed.

3. Firmly (but not stiffly), draw the pen toward you.

4. For drawing thick and thin lines, hold the pen at a 45° angle.

If you want narrow lettering pens, follow the construction procedure indicated above but file each side of the pen point until it reaches the desired width. If a wider writing surface is desired, place two of the modified clips side by side. Secure them on an appropriate staff. Be sure to place a nail or piece of metal through them to keep them in line.

With this expedient pen I wrote "finis" to my story. Play it smart, brother. With this "gimmick," you've got a certain means of being *letter perfect* without a commercial lettering pen.

A fool can profit by his own experience but I prefer to profit from the experience of others.

Bismark

The following information provides a means of keeping up-to-date on matters of professional interest.

DEVELOPED

Indirect Fire Kit. A new device for teaching indirect fire observation procedures has been developed by the Naval Special Devices Training Center, Port Washington, N. Y. The designation of the new device is 22-GR-6. It consists of a kit of eight terrain transparencies upon which problems of precision and area adjustment can be portrayed.

An instructor manipulates the device by projecting a binocular reticule simultaneously with a burst template on a terrain transparency. Students then correct burst deviations on the transparency by proper sensings and fire-adjustment commands.

•

Mine Training Aid. A set which can be used to teach the doctrine and techniques of land mine warfare is being developed currently. It will be used, in addition, to familiarize military personnel with enemy and allied mine warfare materiel. The set consists of realistic models, transparencies and cutaways of mine equipment.

•

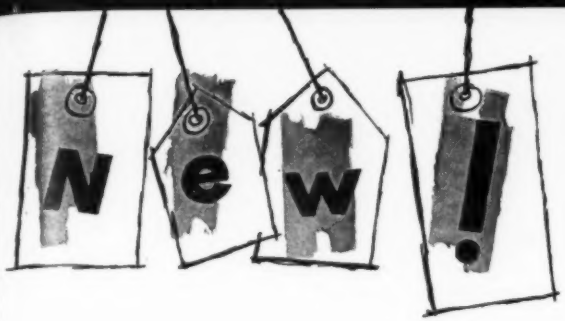
Field Telephone Unit. A new field telephone unit has been developed which weighs 178 pounds and is 5½ cubic feet in size. Sets used presently by the army weigh 475 pounds and are 20 cubic feet in size. The new unit can handle 12 simultaneous calls over a single interconnecting cable—three times as many as terminal outfits used in Korea and World War II. Distances up to 1000 miles can be covered by linking several of the telephone's terminal stations together. The set is designed to withstand wind and rain, desert heat and Arctic cold as well as 100 per cent humidity.

Test apparatus necessary for maintenance and a repeater unit, to reduce "voice level" on longline operation, have also been designed.

•

Skycar Tramway. The army has devised a new method for transporting supplies from ship to shore. Transportation Corps engineers have developed an aerial tramway, one-half mile long, which can be used to speed cargo across water and beaches at the rate of 30 miles per hour. The apparatus consists of steel towers, 100 feet high, which support parallel steel cables. The cables furnish tracks upon which "skycars" shuttle forward and back, carrying 12 to 20 tons of cargo each trip and as much as 120 tons of cargo per hour. The cars are powered by 135 hp gasoline engines.

During an experimental run, over 540,000 tons of cargo were transferred in 2000 hours. Technicians say that the tramway will enable the army to surmount supply obstacles such as wrecked ports, rocky coasts and mined beaches.



NEW

Counter-mortar Radar Unit. The army has a portable radar "eye" which can detect and trace an enemy mortar shell through its trajectory and thereby reveal enemy mortar positions. By relaying this information to an artillery fire direction center, a counter-barrage can be sent against the enemy in a matter of minutes.

Mortar locator, AN/MPQ 10 was used successfully in Korea. It is light, mobile and about the size of a large-screen television set. A modified gun carriage mounts six major assemblies of the radar system, including the elevation and range computer.

The radar unit is organic to headquarters and headquarters battery, 105mm howitzer battalion of division artillery. It is used also by corps artillery's observation battalion.

TIPS

Dislocation Allowance. A new regulation provides officers, warrant officers and enlisted men (grades E-4 and above that have over four years of service) with an extra month's quarters allowance upon completion of a permanent change of station when their dependents actually make the move. This allowance compensates for the expense of establishing a new residence.

•

Baggage Limit Raised. When making a permanent change of station, military personnel will not be charged for 66 pounds of baggage on any scheduled airlines flight. Previously, this privilege was limited to personnel traveling on transportation requests, but now applies to persons paying cash as well. You must show a copy of your orders, but need not wear a uniform to benefit from this increase.

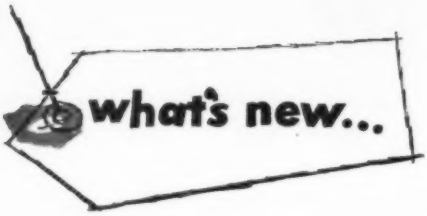
•

Per Diem. Here are some facts that may help to clarify the new change in per diem rates. The old $9 per diem rate is paid for actual travel time. The new rate of $12 is paid for your day of arrival and for 30 days thereafter—if government quarters are not available at your temporary duty station or travel delay point. This new rate will be paid to persons attending courses of instruction if government housing and mess facilities are not available. Travel outside of the United States is still $9 per diem.

UNDER TEST

Psy War Rocket Launcher. A new multi-barreled, aluminum rocket launcher, the T-127, is currently under test at the Psychological Warfare Center, Fort Bragg, North Carolina. It can scatter leaflets at a range of 2000 yards.

(Continued on next page)



Unlike its predecessors, the T-127 can be used repeatedly. Its height of explosion is regulated by a timing device, and determines the extent to which leaflets are scattered. The test model of the T-127 contains three barrels, but up to 20 barrels could be incorporated. Each barrel holds up to 600 leaflets.

•

Aerial TV Reconnaissance. The army is experimenting with aerial TV reconnaissance. Television equipment has been mounted in a piloted army liaison plane and tests indicate that the system will work. Further tests will be held in order to work out a system in which robot planes may be used.

Through the TV eye in the plane, a commander can see a battefield on his receiving set. If he wants to look more closely at a particular place, he can signal the pilot to swoop low over that area.

The commander doesn't have to wait for aerial photos to be developed, either. Enemy mortar and artillery positions, as well as friendly fire, may be observed by TV.

•

Smoke Against A-Bomb. Current tests indicate that smoke "cools" an atomic blast just as clouds diminish the effect of the sun's heat.

Two types of smoke are under consideration: artificial fog produced by standard army smoke generators (condensation of heated oil vapors passed through the air) and carbon smoke or "smog." Means are being studied to blanket areas with smoke in fifteen minutes or less. There is no concrete evidence that this use of smoke will reduce casualties produced by the atomic shock wave and gamma ray radiation.

FIELD MANUALS

Changed. FM 23-5, Change 2, "US Rifle Caliber .30, M1." This change prescribes and explains the use of a new combination firing data and score card for M1 rifle instruction and qualification firing. The new card has been printed and is now being distributed.

•

A training circular (as yet unnumbered) dealing with the tactical employment of scout dogs has been approved for printing and will be distributed shortly.

Revised. FM 23-55, "Browning Machine Gun Caliber .30, M1917A1, M1914A4, M1919A4E1, M1919A6 and M37," has been revised and brought up to date. This manual has been forwarded to CONARC for approval. Publication date cannot be estimated at this time.

•

Revised. FM 23-65, "Browning Machine Gun Caliber .50, HM, M2." This revised manual has been forwarded to CONARC for approval. It prescribes, for the first time, a qualification course for gun crews of the .50 caliber Browning Machine Gun. Publication date cannot be estimated at this time.

TRAINING FILMS

Seven training films (average running time, 30 minutes each) dealing with the Machine Gun Caliber .30, M1917A1, will be released about 1 October 1955.

The following is a list of the seven films:

1-2. *Introduction, Technique of Machine Gun Fire.* Part I explains the fundamentals and principles used in delivering the characteristic fire of the machine gun. Part II deals with the application and control of machine gun fire when engaging field targets.

3. *Engagement of Targets—Direct Laying.* This film presents the proper technique of fire used to engage various targets with the machine gun.

4. *Preparation of Range Cards.* (Title is self-explanatory.)

5. *Expedients for Predetermined Fire.* This film shows the importance of delivering machine gun final protective lines within the desired sectors under all conditions of visibility.

6. *Overhead Fire.* Teaches the methods of applying overhead fire in support of friendly troops through the use of the gunner's and leader's rules.

7. *Position Defilade.* This film deals with the definition, types, advantages and disadvantages of position defilade. It explains methods of engaging targets from position defilade.

•

Filming has been completed on the following eight airborne training films (average running time, 10 minutes each) which are due for immediate release:

1. *Assembly Problem After Fifth Novice Jump.*
2. *Personnel Parachute Malfunctions.*
3. *Personnel Parachute Entanglements and Recovery after Twists.*
4. *Parachute Landing Falls.*
5. *Parachute Training in the 34 Foot Tower.*
6. *Conduct of a Parachutist in the Aircraft.*
7. *The Swing Landing Trainer.*
8. *Parachute Recovery and Shake-out During Novice Training.*

"The Airborne Soldier," a 30 minute training film intended to motivate trainees to qualify as airborne soldiers, will be released about 1 October 1955. The film is an orientation on the thoroughness of airborne training.

•

A film depicting summer camp training of ROTC cadets will be released about 1 November 1955. This film will include scenes from most of the ROTC Summer Camps throughout the United States.

SOVIET

MAJ CHARLES A JACKSON

TACTICS

The Soviet Army has not been engaged directly in an armed conflict between nations since World War II. Our knowledge of Soviet military doctrine is limited, therefore, to a study of World War II tactics and research data available since then. It would be erroneous to conclude that this article represents a totally accurate appraisal of current Soviet tactics. It is, however, as accurate a picture as we are able to present at this time.—Editor

I. ATTACK

Like the US Army, the Red Army teaches that offensive action wins wars. As one Russian strategist declared, "The victor will be the one who finds in himself the resolution to attack; the side which will only defend itself is doomed to defeat." Not until 1942 did Russian regulations admit defense to be a "normal form of combat." Even today, defense is considered merely a temporary expedient, used to hold space or to gain time, to allow the concentration of friendly forces or to disorganize the enemy before resuming the offensive.

Soviet offensive tactics are based upon the principles of mass and momentum. "Mass" means the concentration of overwhelming man and fire power at the point where a breakthrough is desired. Momentum means the continuous and growing impetus of wave after wave[1] of troops, moving relentlessly forward to seize the objective and onwards in pursuit of the foe. The essence of momentum is a succession of mounting blows rather than any single decisive stroke.

The Soviets plan each attack on a single general pattern. Each penetration

[1]Webster defines a wave as a *line* of attacking or assaulting troops. As referred to in this article, the Soviet wave does not mean merely a skirmish line of riflemen: each wave has depth—depth contrived by narrow frontages and echeloning units.

becomes a breakthrough. Each breakthrough develops into a deep envelopment with columns meeting to surround large units. These encircled units are annihilated in detail while the bulk of Soviet forces drives further into the enemy's defenses or pursue his withdrawal.

We are going to discuss a Soviet attack upon a well-prepared position—one that has been built up for weeks or even months. Soviet tactics include meeting engagements and attacks on lightly held positions. But these call for fire and maneuver tactics: they do not require the meticulous planning and the massing of strength we shall describe. The defenses which can withstand such an attack as this have little to fear from smaller forces, less exhaustive plans.

A successful Soviet attack develops through the following phases:

a. Preparation and Buildup.
b. Assault.
c. Battle Within the Enemy Position.
d. Pursuit

Let us consider each phase in turn.

The Soviet Army probably makes more detailed preparations for an organized attack than any other army in the world. Soviet doctrine stresses reconnaissance: the Russian soldier is trained to regard each patrol as a small assault, an act of aggressive personal warfare. He makes an expert scout and penetrates deep into hostile defenses to study terrain and enemy dispositions. He tries especially to take prisoners — "tongues" is his brutal nickname for them—and to locate unit boundaries and exposed flanks. A day or two before the attack, the Soviet commander often launches a reconnaissance in force. This miniature assault involves at least one reinforced battalion per division, and if the enemy proves weak or unprepared, may expand into a full scale attack.

Before a major assault, Soviet units on line are relieved or reinforced by fresh troops. These assault units are concentrated 15 to 20 miles behind the front lines, with tank and mechanized units as much as 10 miles farther back. These concentration areas are chosen for concealment and may lie far to one side of the attack area.

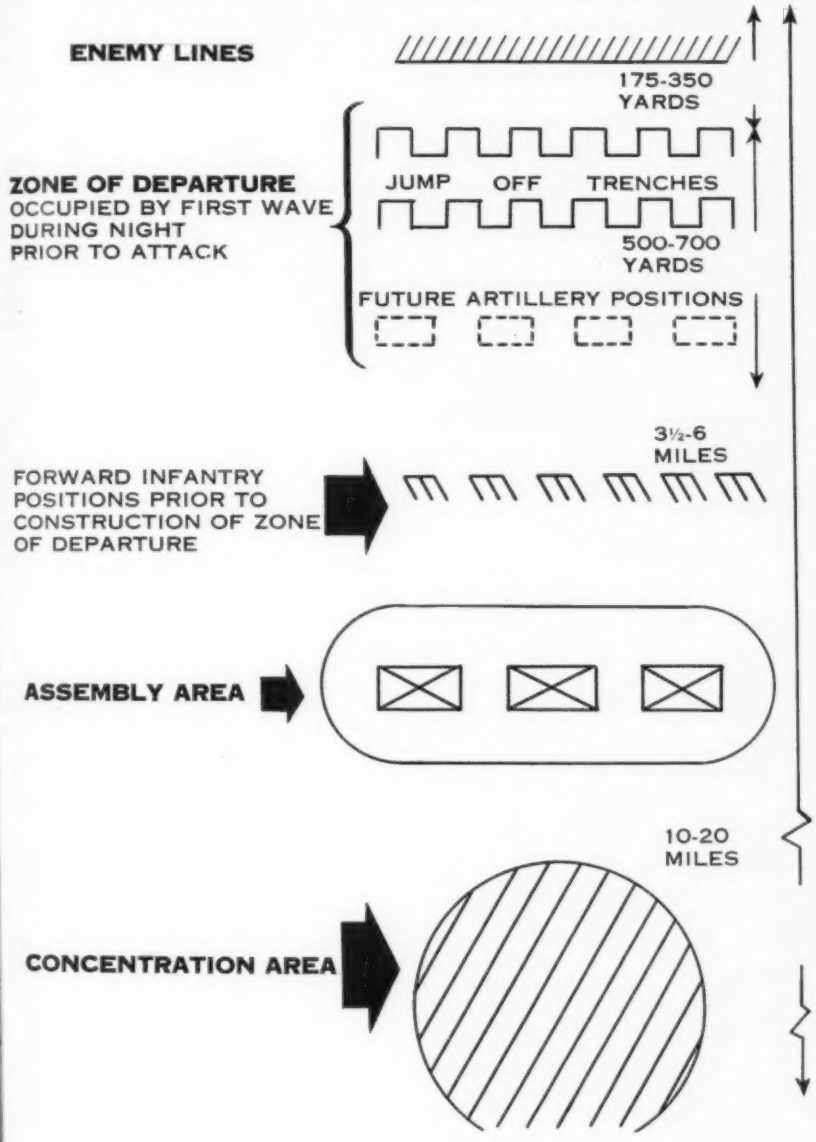
Here the assault units and commanders are prepared for their missions. Commanders go forward for planning and reconnaissance. When possible, detailed rehearsals are conducted. These are staged on terrain similar to that which the troops will actually encounter. They range from divisional exercises to squad rehearsals, which may take place only a few thousand feet from the enemy's forward positions.

About 24 hours before the assault, the attacking troops slip into assembly areas 4 to 6 miles behind the front. They move in small units—often using infiltration methods—and they move by night or over well-concealed routes. Within assembly areas, maximum dispersion of units is the rule.

The Soviets commonly use a "departure position" in attacking a strong defensive line. This corresponds roughly to our attack position. The area is 500 to 700 yards deep, its rear edge coinciding with the Soviet MLR and its forward edge—the "assault line"—only 175 to 300 yards from the enemy. The degree to which this position is developed varies with the terrain, enemy strength and time available before the attack. If the enemy is weak or in retreat, the Soviets may attack directly from the forward assembly areas or from march formation.

Throughout the preparation and buildup, the Soviets take elaborate precautions to surprise the enemy. All counterintelligence measures are strictly enforced. Orders at battalion and lower levels are oral. Reconnaissance missions are as-

LAYOUT OF SOVIET OFFENSIVE PREPARATIONS



signed to troops already on line so as not to betray the presence of new units. Reconnaissance is intensified all along a wide front in order to conceal the direction of the main blow. When the assault line offers no cover, "assault trenches" may be dug. Positions for artillery and crew-served weapons are prepared and obstacles cleared. But all the work is done by night, under the cover of artillery fire. Counterreconnaissance screens shield these preparations from enemy patrols, and during the day, all positions are skillfully camouflaged. Elsewhere along the front, the Soviets may construct dummy positions to confuse the enemy.

Sometime during the last 24 hours prior to the attack—usually the night before—assault troops move into the departure position. Artillery drowns the noise of the movement and distracts the enemy. Each small unit knows its place in the departure position, its precise objective along the enemy's lines.

Supporting artillery advances into position throughout the buildup period. Organic artillery is strongly reinforced from GHQ reserves. Registration is conducted within the daily fire pattern of units already on line. Often, for security, only one piece of a firing unit registers, and the data thus obtained is corrected and applied to all pieces of the same caliber. Much Soviet indirect fire is area rather than point fire, and slight inaccuracies are considered unimportant. The night before the attack, direct fire artillery—each piece with its assigned target—is moved by hand into camouflaged positions.

The assault plan visualizes attacking units moving in a series of waves. Typical assault frontages for Infantry are:[2]

Russian Frontages

Rifle platoon: 100-150 yards.
Rifle company: 250-350 yards.
Rifle battalion: 350-700 yards.
Rifle regiment: 700-1500 yards.

US Frontages

Rifle platoon: 100-250 yards.
Rifle company: 200-250 yards.
Rifle battalion: 500-1500 yards.
Rifle regiment: 1000-up (may vary considerably).

Although the overall plan may call for a single or double envelopment, the frontages assigned to battalions and smaller units restrict them to direct frontal attack. This tight packing increases the shock effect of each unit but limits freedom of maneuver and the exploitation of terrain.

Formations are not stereotyped. A triangular formation, with two up and one back, is typical from division down to battalion and company. An inverted triangle or wedge and right and left echelons are also possible formations. A column of units may be used for an all-out attempt against a deep position or to exploit the success of earlier waves.

In the first phases of an attack, assaulting units employ few reserves. The reserve in each battalion may be only a reinforced platoon. But the second echelon of a typical triangular formation, usually considered a means of "weighting" the main force, gives the commander ample means to influence the course of action. To American thinking, Soviet use of reserves seems inflexible, restricted by narrow frontages and scant communications. But in the fire and maneuver phase within the enemy's position, Soviet units maneuver on wider frontages, allowing greater freedom.

The Assault

The stage is now set for the assault itself. The usual overture is the artillery

[2]Soviet frontages tend to be rigid while US frontages are far more flexible.

Red Army men firing at enemy aircraft. Note the prone position of most of the men.

barrage. This may last from 2 to 4 hours, and it will include every mortar and artillery piece the Soviets can bring to bear. During World War II, they concentrated as many as 250 to 300 guns and mortars to every thousand yards of front. The barrage is intensified by tactical air strikes. It continues unbroken throughout the attack and subsequent consolidation: this continuous support of massed artillery the Soviets have named the "artillery offensive."

Under cover of this bombardment, obstacle clearance teams crawl forward to gap minefields, breach barbed wire and clear or mark all other obstacles. Meanwhile, if they have not already done so, the assaulting troops occupy the assault trenches, while tanks start forward to join the Infantry at the assault line.

The signal for the assault itself may be the arrival of tanks at the assault line, the lifting or shifting of artillery fire, pyrotechnics, bugles or radio signals. Artillery fire may shift to the rear in order to destroy reserves and supporting weapons, or to the flanks in order to form walls of fire between which the Infantry advances. (False artillery preparations, false lifts and safety lanes are favorite Soviet tricks to discover the positions of enemy artillery or lure reserves into positions where Soviet artillery can destroy them.) At least part of the artillery fire precedes the assault waves with a steady rolling barrage. This moves at 100 yard steps, controlled by signals from the attacking Infantry. Some artillery is attached to attacking units for close-in support. It is towed by hand, following the Infantry closely and delivering fire as needed from the nearest defilade.

At the assault signal, the foremost Infantrymen spring from their jump-off positions and attack. They move rapidly from cover to cover or by continuous fast crawling. Specially organized and equipped engineer groups may join them to help breach major obstacles and reduce

fortified positions. Heavy machine guns and other crew-served weapons, placed well forward in the departure position, open fire between and to the flanks of the assaulting units until their fire is masked. Then mortars and heavy machine guns alike follow the Infantry forward. In order to maintain momentum, Soviet doctrine insists that the first wave keep as much firepower to the front as possible, firing on the move rather than from stationary positions. Supporting weapons must move with the wave and not lag behind.

Tank-Infantry attacks are closely coordinated. Each tank is assigned a specific point on the assault line through which it passes at H-hour. Signals between tanks and Infantry are prearranged, since no radio connects them and Soviet tanks do not carry outside telephones. Tanks and Infantry are not allowed to become separated by more than 400 meters (440 yards). The tanks protect the foot soldier with mobile direct artillery. They are in turn protected by the self-propelled artillery which follows them. The employment of towed and self-propelled guns as "antitank strong points" or "mobile antitank reserves" leaves tanks relatively free to concentrate (in the attack) on targets which are holding up the Infantry and (in the defense) to join the Infantry in counterattacks.

The first wave seeks to break through the enemy MLR, by-passing all determined resistance and leaving small holding forces to contain enemy strong points until the second wave can destroy them. The first wave drives directly to the objective, stopping for nothing. The second wave—which follows 300 to 500 yards behind—mops up. If the first wave slows, halts or disintegrates, the second one pushes through it, assuming its role and mission to preserve momentum. Subsequent waves follow through in the same manner. Large armored forces are not committed until the second or third wave, when the enemy defense is cracked. Their mission is large-scale exploitation of the initial breakthrough.

The Soviets direct every effort to keeping the attack rolling and the enemy under maximum pressure. The result is a seemingly endless flow of attack troops. The Soviets prefer not to undertake a major frontal attack unless they can concentrate odds of 4 to 1. Often the odds are much greater. Soviet offensive tactics do not overlook mobility, maneuverability and surprise, but these are subordinated to mass and momentum. The Soviet attack is like the charge of a bull —there is little fancy footwork.

Battle Within the Enemy's Position

The second phase of the attack is the "battle within the depths of the enemy's position." During this phase, units operate on wider frontages, employing fire and maneuver tactics. At this stage, large-scale tank and mechanized units are introduced. The unit advancing farthest receives the greatest fire support. If a neighboring unit is held up by the enemy, the successful commander presses his own attack. He has been taught that his own vigorous advance is the best support an adjacent unit can receive. As assault units falter and break apart, succeeding waves sweep past, annihilating pockets of resistance, overrunning command posts and supply installations, seizing road junctions and critical terrain.

This practice of jamming unit after unit through and over preceeding waves poses tremendous problems of reorganization. Controlling and coordinating small units of various arms becomes extremely difficult. *This is the point at which it is easiest to smash the Soviet onslaught.*

Soviet tacticians are well aware of this danger. They regard the battle within the enemy's position as the most difficult

ESTABLISHMENT OF SOVIET ATTACK MOMENTUM

FIRST WAVE: BYPASSES STRONG POINTS; REACHES ATTACK OBJECTIVE QUICKLY
HOLDING FORCES: (DROPPED BY FIRST WAVE) CONTAIN BYPASSED STRONG POINTS
SECOND WAVE: (1) MOPS UP BYPASSED STRONG POINTS (2) SUPPORTS FIRST WAVE
(3) IF NECESSARY MAY PASS THROUGH FIRST WAVE
SUBSEQUENT WAVES: BOLSTER MOMENTUM OF ATTACK

Russian snipers on their way to forward positions.

and perilous phase of the attack. Accordingly, Soviet doctrine stresses prompt consolidation. "An offensive without consolidation," declared Stalin, "is an offensive doomed to failure."

As soon as the enemy's forward strong points are taken, Soviet mortars and heavy machine guns move into position, ready to support further advances or to repel counterattacks. Regiments and larger units employ mobile antitank reserves against armored counterattacks. These reserves include combat engineers, tank-killer teams armed with short-range antitank weapons and antitank artillery. Mines are used almost as freely in the offense as in the defense to seal off tank approaches. If the advance continues, the mines are recovered and moved forward for further use. The Soviets have learned to set up deep defensive systems of fire, obstacles and mines in a very short time.

The Pursuit

The pursuit must be organized immediately upon a breakthrough and enemy withdrawal, and pressed relentlessly to the complete annihilation of the enemy. Soviet doctrine distinguishes two types of pursuit: frontal and parallel. Frontal pursuit follows the enemy along the same routes he has chosen. In parallel pursuit, the Soviets send mechanized, horse-mounted or (in difficult terrain) foot columns racing parallel to the enemy's line of retreat. These strike at his flank and rear, while maintaining pressure on the rear guard. This slows the enemy so that the Soviets can reach critical terrain or strategic positions before he does. Parallel pursuit is the Soviet favorite, since it easily develops into complete encirclement. Once the pursuit has begun, only a senior commander can halt it.

To summarize: a Soviet attack is characterized by elaborate preparation and deception, overpowering mass, speedy exploitation, encirclement and rapid, aggressive pursuit. The objective is not a temporary advantage or the capture of critical terrain. It is the complete annihilation of the enemy.

II. DEFENSE

The Soviets define the defense as a "method of fighting by which forces can withstand a numerically superior enemy by a combination of firepower, fortifications and exploitation of terrain." They do not distinguish defense from withdrawal: any forward movement is attack; any rearward movement or stationary action is defense. The objectives of the defense are: "(1) to halt the advance of the enemy, (2) to destroy the greatest possible number of enemy troops and (3) to create conditions favorable to shift to the offensive."

The Soviets employ both "sustained defense" and "mobile defense." The mission of sustained or static defense is to hold a specified sector of terrain at all costs and to prepare for a renewed offensive. It consists of elaborate defensive systems in great depth—often as much as 30 miles. To withdraw from a sustained defense position is forbidden except with permission of a senior commander—and this permission is rarely given.

Sustained defense is subclassified as centralized or decentralized. Centralized defense, used when the number of Soviet troops is large in relation to the size of the defense sector, consists of a line of close, mutually supporting strong points. When their troops are few or the front is unusually long, the Soviets use decentralized defense. This consists of self-sufficient and independent islands of resistance blocking main approaches. Gaps are protected by small Infantry units and obstacles covered by fire. Each island is organized for all around defense. Each has its own reserve force, while in centralized defense, reserves and the activities of all strong points are controlled by a central headquarters.

Mobile defense, the second basic type, resembles our delaying action. Soviet forces withdraw along a series of hastily

A Russian rifle anti-tank grenade (front) and an anti-tank rifle (rear).

fortified positions, keeping the enemy off balance by short, sudden counterattacks. Whereas the sustained defense holds the enemy in place, mobile defense delays and disorganizes his advance, while inflicting heavy losses on his troops. Sustained defense emphasizes stability, depth and antitank measures. Mobile defense emphasizes firm control over the withdrawal, active harassment and counterattacks, larger reserves and the destruction of useful materiel before the enemy can exploit it—the famous "scorched earth policy."

The sustained, centralized defense is the Soviet favorite, and we shall therefore discuss it in some detail.

Defensive Zones

THE SECURITY ZONE. Depth is the key to Soviet sustained defense—depth normally achieved by the organization of four zones. The first, the security zone, may extend as far as 10 miles forward of the MLR. Mobile covering forces and patrols range to the outer edge of this zone. The first organized delaying position is the "line of outposts," similar to the US "general outpost line" in location and mission. The outposts detect the enemy's advance and cause him to deploy, delaying the attack as much as possible.

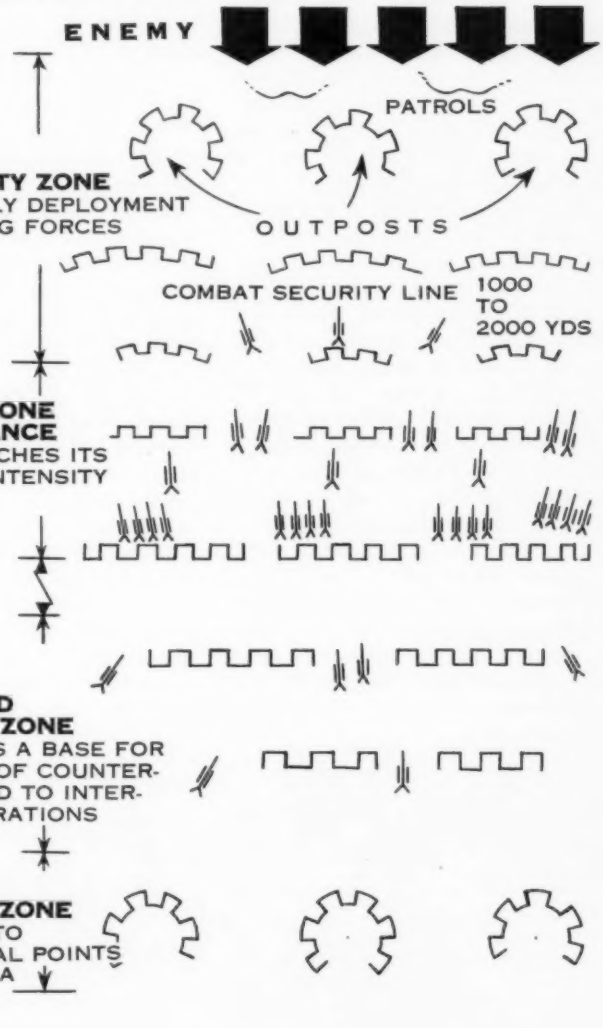
From 1000 to 2000 yards forward of the MLR the Russians establish a "combat security line." The strength of this line ranges from a platoon to a company for each front-line battalion. These units are distributed in a series of outguards as in the US combat outpost line. The security line bristles with machine guns and antitank weapons, and mortars up to 120mm in caliber are brought forward of the battle position for support. The Soviets pepper the line with antitank and antipersonnel mines, and if they have time, completely wire in the outguards with barbed wire. Besides the missions of the outposts, the combat security line must attempt to contain the enemy attack temporarily. Thus it is more likely to engage in close combat than the US combat outpost line, which it closely resembles. Moreover, we specify a set of conditions as a basis for withdrawal, while the Soviet security line commander must hold until a certain time. This deadline often demands hard fighting on the security line.

The security line is sometimes placed at an angle to the MLR to deceive the enemy as to its location. A dummy MLR may be constructed parallel to the security line. The enemy must regroup under fire to attack the decoy, and exposes his flanks as he swings toward it.

THE MAIN DEFENSIVE ZONE. Next is the main defensive zone, the core of the whole structure. This is the battle position: the most powerful artillery effort is concentrated to the front of this zone, and the bulk of troops and antitank weapons are found here. The units occupying this zone are primarily Infantry divisions; the Soviets prefer to keep their tank and mechanized divisions in reserve further back. However, separate tank units may be attached to the rifle divisions to support the defense or as reserves. Infantry and mobile antitank reserves (consisting of self-propelled artillery, towed antitank guns and special tank-killer teams) are at hand to counterattack any penetrations of the battle position. To the rear of this zone —usually 5000 to 6000 yards deep—the Soviets mass additional artillery and mortar units to reinforce the fire of the organic divisional artillery.

THE SECOND DEFENSIVE ZONE. Behind this main defense zone we find the second defense zone. Its depth extends from 3 to 9 miles, and it is often located behind a natural antitank barrier or strongly protected by

ZONES OF A SOVIET STATIC DEFENSE SYSTEM



artificial tank obstacles. This zone does not begin immediately at the rear boundary of the main defensive zone: the Soviets prescribe an interval of 6 to 11 miles—enough to force the enemy to regroup his forces and displace his artillery forward before resuming the attack. This break diminishes his momentum, exposes him to artillery and air concentrations and gives the Soviets time to mount a counterattack.

The second defense zone is established on orders of the corps commander and is occupied by units in corps reserve. Its purpose is to block and destroy enemy penetrations. Here, therefore, we find a high proportion of mechanized or tank divisions, forming a strong, swift force for interception and counterattack.

THE REAR DEFENSIVE ZONE. The fourth—and usually last—zone is known as the rear defensive zone. It extends approximately five miles in depth and is established by the army commander. This defensive zone is not organized in the same manner as the others. Tank and mechanized units are placed around strategic points such as supply centers, road junctions, bridges and passes leading to the rear. These forces deny hostile forces key points even if all other defenses have been swept away. They block passage to the rear areas and are prepared to join in counterattacks by army group reserves.

The Battle Position

The battle position deserves further discussion, since it is the most important element in the Soviet defensive structure. The Soviets expect the defenders of this position to hold at all costs—and even to defeat the enemy by fire before he reaches it. Defenses are elaborate and deep, stressing antitank measures, switch positions and deep echelons of artillery.

POSITIONS. The MLR is organized on desirable frontages with mutual support between units and maximum use of fires and obstacles. Critical terrain is defended by battalion "knots" or "strong points," set up for all around defense with interlocking fires. Gaps and unit boundaries are strengthened by obstacles and heavy fires.

The importance of the terrain to be

Men of the Red Army with their trench mortars on the bank of the River Don.

defended in each sector determines the frontage assigned to each unit: the greater the importance, the narrower the front. Normal defensive frontages are as follows:

Rifle platoon: 300 yards.
Rifle company: 700 yards.
Rifle battalion: 1500-2000 yards.
Rifle regiment: 4000-5000 yards.

The Soviets do not employ limiting points. The regimental commander, through joint reconnaissance and supervision, insures coordination of unit defenses.

RESERVES. On such frontages, division, regimental and battalion commanders will usually employ a triangular formation with two elements forward and one in reserve. The reserve occupies primary positions, but is prepared to move to supplementary positions or to counterattack. Here Soviet nomenclature is misleading. Although they frequently designate smaller reserves in front-line units than we do, the actual disposition of the units provides adequate reserves. A front-line Infantry regiment may designate only one company at its "reserve." Nevertheless, in a triangular formation, the entire rear battalion acts as a reserve in our sense of the word. When frontages are excessive, however, the regimental commander may reduce his reserve to 1/9 of his forces, and rely on higher echelons for support. Besides Infantry reserves, tank and mobile antitank reserves are available to blunt penetrations and to counterattack.

CAMOUFLAGE, FORTIFICATIONS, OBSTACLES. Whenever possible, the battle position is located behind a river, swamp, gorge or other natural obstacle. The Soviets exploit such natural advantages by camouflage, fortifications and obstacles. They consider it imperative that the front edge of the main zone of resistance be completely concealed. The camouflage is checked periodically by aerial photography, and shortcomings are quickly corrected.

The Soviets are expert in the swift construction of complicated systems of trenches and firing positions. The regimental engineer devises a fortification plan for the approval of the regimental commander, but only the most vital construction is carried out by engineers. The rest is left to the Infantry, working under engineer direction.

Individual foxholes quickly branch into networks of trenches, weapons emplacements, earth and timber bunkers, concealed communications routes and dummy installations. The MLR is backed by several alternate lines of defense, complete with rows of trenches, tank and artillery positions, obstacles and minefields. Switch positions for Infantry and antitank artillery offer flanking fire against penetrations. Except in extreme cold, personnel shelters are erected only when fighting positions are finished.

Obstacles are thickly strewn throughout the Soviet defenses, especially along avenues of approach and unit boundaries. Antipersonnel obstacles include sharpened stakes, wire and mines; antitank obstacles are mines, hedgehogs, ditches and traps. Soviet doctrine insists that obstacles and mines must always be covered by fire. Covering weapons are located far enough away to avoid fire placed on the obstacles. Besides inflicting casualties and delaying the enemy's advance, obstacles and mines often channel his forces into a fire sack or encirclement.

ARTILLERY. The senior commander of artillery supporting the regiment is designated the "regimental artillery officer." Following the instructions of his

artillery superior and the regimental commander, and after attending the regimental commander's joint reconnaissance, he prepares a plan for the use of artillery against tanks (its secondary role). The regimental commander, who retains responsibility for antitank defense, approves this plan. In addition, the artillery officer advises the commander on antitank defense, and coordinates the similar activities of artillery officers at lower levels.

The over-all artillery plan provides for area concentrations in enemy assembly areas to break up the attack before it starts. Closer in, a rolling antitank barrage is prepared to hit the leading tanks with the first fire and follow enemy armor in towards the MLR. There the enemy encounters the final protective barrages, and additional concentrations are planned within the main battle position: Antitank weapons are massed in "antitank strongpoints," located on the main armored approaches, and conventional artillery is carefully placed with an eye toward its secondary antitank mission.

Antiaircraft machine guns cover the most important defense areas—including supporting mortar and artillery positions—as densely as possible. Provisions are made for antiaircraft warning posts and alarms, and even Infantry units are instructed to fire on low-flying enemy planes. (See picture, page 65.)

The completed regimental position represents a defense by combined arms. Infantry serves as the backbone of this defense. Unit areas are mutually supporting, and frontages permitting, each unit has its own reserve. The reserves are prepared to defend in place, to shift to secondary positions or to counterattack. The front line units are supported by tank and mobile antitank reserves and carefully planned artillery fire. Each commander is responsible for the development and defense of his area. Negligence or carelessness in the defense constitutes a grave military offense.

Conduct of the Defense

Now we turn to the conduct of this defense. Before the attack begins, long range artillery attempts to upset the enemy's preparations with fire on assembly area, gun positions, communication centers and supply points. During the enemy's artillery barrage, the Soviet forces keep under cover except for a few observers to warn of the enemy's approach. The attacking force first contacts mobile units of the covering force. These patrols and units of the outpost line delay on successive positions until they reach the combat security line. There try to inflict as many casualties as possible, and make free use of mines and demolitions to create obstacles.

When within observation of the combat security line, the attacking force is brought under long-range artillery fire increased by small arms fire from the security line and its supporting mortars. To surprise the enemy all fire is often withheld until his forces are within effective rifle range.

If the enemy overruns the combat security line, he is kept under increasingly intense mortar and artillery fires. These reach their crescendo in final protective barrages before the MLR itself. Crew-served weapons and small arms join in when the enemy is 400 yards from the MLR, although heavy machine guns and antitank weapons, emplaced well forward in the battle position, may open fire sooner. The attacker is now faced by a band or bands of barbed wire and a profusion of mines. The Soviets aim to separate tanks from Infantry and destroy each in turn: barrages, fires and obstacles stop the Infantry, while the weakened tank forces are disposed of by Infantry antitank weapons.

Having fought his way through all this, the attacker must still crack the all-around defense of Soviet strong points. Since no unit may yield ground without permission from above, every strong point, every obstacle is bitterly defended. Troops manning concealed weapons wait to be bypassed and then fire on the enemy's flank and rear.

At this point, the Soviets shift their reserves to contain the penetration or to counterattack. Soviet counterattacks differ in some respects from our own. They aim not at restoring the MLR, but at the destruction of the penetrating force. Recovery of terrain is secondary. To accomplish this annihilation, the Soviets attempt to encircle as large a segment of the penetration force as possible. Isolating it from support and reinforcement, they cut it up piecemeal or crush it with artillery fire. Sometimes these tactics require a counterattack forward of the main battle position — occasionally launched directly parallel to the enemy thrust.

Soviet doctrine calls for counterattack sooner than our own. The counterattacking force may not wait until the penetration has been halted. Mobile antitank reserves blunt the penetration while armor and Infantry strike its flanks. Unless Soviet tanks are overwhelmingly superior in number, they are specifically forbidden to meet enemy tanks head on.

If these counterattacks fail, units in the main battle position fight on even though encircled. The enemy has broken the backbone of the Soviet defense, but ahead of him stretch the second and third defensive zones. He has much hard fighting to do before he counts his victory complete.

To summarize: the Soviets employ both "mobile defense" and "sustained defense." Characteristics of a sustained defense are great depth and elaborate defensive systems. Defense is considered as merely a temporary expedient and emphasis is placed on counteroffensives. The final objective of Soviet defense—like that of the attack—is complete annihilation of the enemy.

We feel rather certain that MAJOR CHARLES A. JACKSON didn't have much difficulty in writing "Soviet Tactics."... He teaches the subject at The Infantry School.

Major Jackson was commissioned in 1940 when he graduated from The Citadel. During World War II, he fought in North Africa and Italy. In Korea, he served as a battalion commander with the 40th Division. He is currently assigned to the Regimental Committee, Tactical Dept., TIS.

The contents of this article do not necessarily reflect the views of the Department of the Army.

HERE'S LOOKING AT YOU

"Although they [the U.S.] defend a reactionary, out-of-date, bourgeois system, while we defend a progressive socialist state, we cannot reject the fact that bourgeois military science exists and develops. We must study it, know their principles, their methods of organization and exploitation of their armed forces. We must do it not out of idle curiosities but to discover their possibilities, to find their strong and weak points and their means and methods of battle.

"Only knowing this would we be able to oppose them with better, more modern and—for them—unexpected methods of warfare."

Marshal Rotinestrov

how would YOU do it?

Read the situations and see if you come up with Lt Colonel Skardon's solutions to these patrolling problems.

GENERAL SITUATION

First Battalion, 85th Infantry, has organized a defensive position pending a favorable opportunity to attack. The company commander has appointed you as a leader of a small night combat patrol. Your mission is to destroy an enemy ammunition distribution point.

SITUATION 1.

The battalion S2 shows you a terrain map of an area which the patrol must cross under enemy observation.

The S2 wants to know what factors you will consider before passing through this area.

PROBLEM 1.

What do you tell him?

SITUATION 2.

You have completed your preparations and have set out to accomplish your mission. The patrol is crossing an enemy wire obstacle during the night. Suddenly, a flare bursts overhead. You are with the point man on the enemy side of the wire; one man is caught in the wire while two others are on the friendly side.

PROBLEM 2.

What should you do? What should the members of your patrol do?

SITUATION 3.

You have breached the enemy wire, but have not reached your objective. One of your men falls and injures his leg. He is unable to continue with the patrol.

PROBLEM 3.

What should you do with this injured man?

SITUATION 4.

The patrol has approached successfully within 60 yards of its objective and security elements have been emplaced. However, just as the "killers" are ready

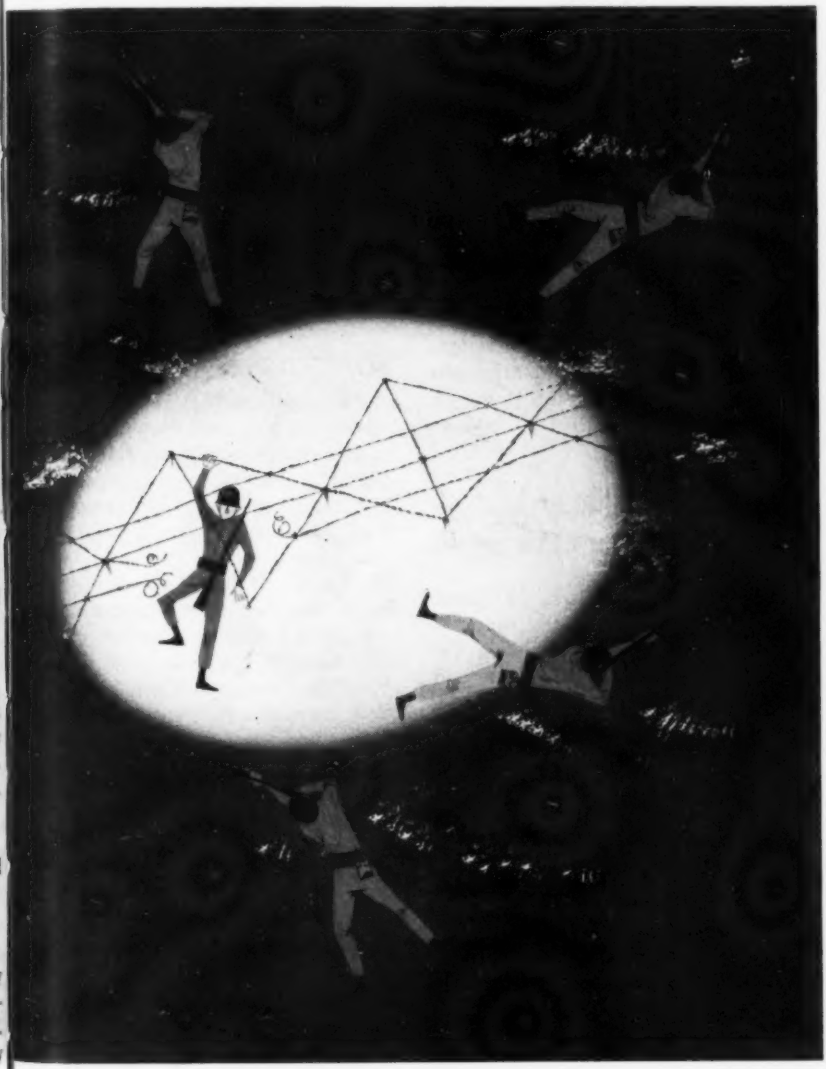
to knife two enemy sentinels, the enemy discovers your patrol. The sentinels open fire and seriously wound one of your men.

PROBLEM 4.

What should you do? What should the other members of your patrol do?

SITUATION 5.

You have accomplished your mission, but during the action at the objective, the patrol has become separated. Your half of the patrol is cut off from its return route by the enemy. The other half is at a rallying point not far from



the objective. A sergeant first class is in command. He has waited a prescribed length of time for the remainder of the patrol.

PROBLEM 5.

What should he do? What should you do?

GENERAL SITUATION

The First Battalion, 85th Infantry, is ready to assume the offensive. Your commander must destroy a key enemy bridge in his zone before the attack begins. It is beyond the range of friendly artillery and close support aviation is not available. He appoints you as patrol leader and assigns you the mission of demolishing the bridge.

SITUATION 6.

The S2 advises you that the patrol must cross rugged terrain and several obstacles to reach its objective. The battalion commander is present during the briefing and stresses the importance of speed. You must complete this task as quickly as possible.

PROBLEM 6.

How can you accomplish this mission in a minimum of time?

SITUATION 7.

Your assistant arrives at the patrol rendezvous point and is informed that a portion of the patrol, including the leader, has been forced down behind enemy lines. He has the demolition team along with him, but only a small part of the security group.

PROBLEM 7.

What should he do?

In *"How Would You Do It,"* LT COL BEVERLY N. SKARDON confronts us with a series of realistic patrol problems based upon combat experiences.

Col Skardon served with the 92d Infantry Regiment in the Philippines during World War II, and with the I Corps in Korea. He was assigned to the Tactical Department, TIS, before assuming his present position as CO of the Second Student Battalion, The School Brigade, TIS.

SOLUTIONS AND DISCUSSION

SOLUTION TO PROBLEM 1.

Security is the primary consideration. This includes reconnaissance, emplacement of security elements to cover the crossing and a suitable formation. We must consider the length of time that any part of the patrol will be exposed to observation as well as its proximity to the enemy. Obstacles will affect the plan and should be evaluated before a final decision is reached. Supporting fires may be used during the crossing to divert the enemy's attention or to restrict his vision. Since knowledge of terrain is limited to a map study, definite crossing techniques should not be decided upon until the patrol arrives at the danger area.

SOLUTION TO PROBLEM 2.

You must provide security for those who have not come through the wire. If you are not fired upon, freeze in position. If the enemy fires at you, return the fire quickly and direct your men to proceed through the wire. Do not neglect your mission because you have contacted the enemy. Initially, he will probably be as surprised as you are. By acting quickly and utilizing darkness to conceal movement, your patrol should be able to cross the obstacle and continue its mission. Remember to use an alternate route, however, when returning from the objective area.

SOLUTION TO PROBLEM 3.

Do not jeopardize the accomplishment of your mission because of an injured man. You must put aside personal feelings in this situation: your mission has priority. After administering first aid, place the injured man in a comfortable, concealed position until your return or report his location by radio code. A helicopter or another patrol can evacuate

him—depending upon your unit SOP for such situations.

SOLUTION TO PROBLEM 4.

Your patrol order provides for emergencies; therefore, discovery at the objective should not alter your plans. As soon as the enemy discovers your patrol, your men should open fire. Security elements must isolate the objective so that the demolition team can place its charges. The assistant patrol leader should direct the evacuation of the wounded man. Such emergency actions must be well rehearsed, however, prior to the patrol's departure.

SOLUTION TO PROBLEM 5.

The sergeant should lead his half of the patrol back to friendly lines. However, the action to be taken in the event of a separation may vary, and should be clearly outlined by the patrol leader in his patrol order.

Your men must break contact with the enemy. You should direct them to build up a heavy volume of fire so that the least engaged men can withdraw safely to positions from which they can cover the withdrawal of those remaining.

SOLUTION TO PROBLEM 6.

You must cross rugged terrain to reach your objective and must accomplish your mission in a minimum of time. Why not ask for special assistance? Helicopter transportation, for example, would overcome the problem of reaching the objective. It would also save time and enable your men to arrive at the objective in good physical condition.

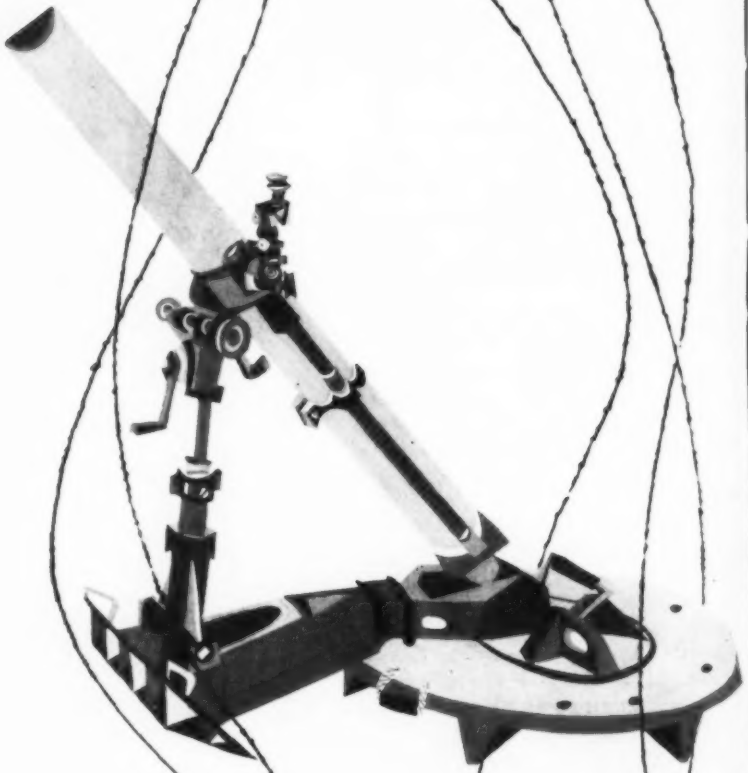
SOLUTION TO PROBLEM 7.

The assistant patrol leader should reorganize a chain of command and carry out the patrols' mission. His force is understrength but an important element, the demolition team, is intact. The patrol should be able to accomplish its mission even without its leader.

GET TO THE TOP

A recent poll of flag pole sitters revealed that they preferred the ISQ two to one. If you want to reach the top, read *The Infantry School Quarterly*. Subscriptions: 1 year, $2.50; 2 years, $4.75; 3 years, $7.00 (foreign subscribers add 25 cents yearly).

HEAVY MORTAR: parade of progress



capt kenneth d. mertel

Few weapons have progressed so rapidly in the past five years as the heavy mortar. The heavy mortar is the Infantry's own artillery—its number one support weapon—and every Infantryman needs to understand the changes and improvements which have been taking place. To help you keep abreast, we interviewed Captain Kenneth D. Mertel of the Weapons Department, TIS.—Editor

Q. What is the most noteworthy change in the field of heavy mortars since 1950?

A. I would consider the biggest change to be the replacement of the old M2 mortar with the 4.2 inch mortar, M30. The 4.2 inch mortar has increased range (from about 4000 yards to 6000 yards) and the ability to complete a full 6400 mil traverse by shifting the bridge. However, it is almost twice as heavy as the M2, weighing 665 pounds.

The 4.2 breaks down into five loads, the baseplate being the heaviest at 205 pounds, and may be carried by hand for short distances. (See Figure 1.)

Q. Has anything been done to lessen the weight of the base plate?

A. Yes, a new one-piece base plate has been standardized, replacing the old base plate and base ring. The same rotator is used on the new model. The new, lighter, more durable base plates will not be issued until stocks of the two-piece plates are expended.

Q. I understand that the bridge on the old mortar didn't hold up too well when the weapon was fired. Has this deficiency been remedied?

A. A new, all-steel bridge has been developed and will replace the old limited-standard bridge on the same schedule as the base plate.

Q. How about sighting—are they still using the M62?

A. The sight used today is called M34, but in reality it is the same as the M62 elbow telescope, with certain modifications. The new sight is no longer mounted on the barrel, but is offset to the left on a new bracket and adapter. With the M34 sight we use aiming stakes (M1A1) similar to those used by the artillery.

Q. That takes us down to the actual laying of the mortar. What are the latest techniques?

A. The best way of laying a mortar is the reciprocal laying system, with the aiming circle using a base angle or azimuth. The base angle is used when survey data is available and a survey orienting line can be used as a reference point. Otherwise, an azimuth is used, orienting on grid or magnetic north.

Q. Are there any changes in mortar ammunition?

A. Yes, several. A 41 charge shell, HE M329, has been developed and is now in use. The shell has a removable extension allowing all but 25½ charges to be removed so that the shell may be fired from the old M2 mortar. The shell is equipped with an M51A5 artillery type fuze and booster, M21A4, both of which are armed by centrifugal force. Bore safe, the fuze has two settings—"SQ" for super quick action on impact and "D" delay of five hundredths of a second. The two fuzes act independently. If the "SQ" fuze is set for super quick and there is a malfunction, the delay fuze will set off the shell and prevent a dud. (See Figure 3.)

Q. Are there any other fuzes that can be used with the new shell?

A. A mechanical time fuze, MTSQ M1500, is also available and is a combination time and super quick fuze. A controlled variable time

fuze, CVT T226, has just been developed and is now standard.

Q. What is the bursting radius of the M329 with these fuzes?

A. The bursting radius of the shell, with any of the fuzes mentioned, is about 45 yards in width and 15 yards in depth. Maximum fragmentation and effect are secured by firing the round at the highest possible elevation, achieving a steeper angle of fall and a more lethal side spray.

Q. Is the white phosphorus shell M2 still being used?

A. Yes. It is used in the new mortar with a maximum charge of 25½. However, a new WP shell, M328, has just been standardized. At the present time, Ordnance is continuing development on the illumination round, M335, which, when completed, will develop about 650,000 candle power for one minute.

FIRE DIRECTION PROCEDURES

Q. Have there been many changes in fire direction procedures?

A. Several very important changes have been made. The M10 plotting board has been replaced by a firing chart. Actually, there are two kinds of firing charts—observed and surveyed. The observed chart is usually a grid sheet on which the platoons, base points and targets are located by firing. The survey chart may be a grid sheet or any accurate terrain map on which the positions have been plotted from survey data. Because of its accuracy, the surveyed chart is more desirable.

Q. What are some of the other instruments now being used?

A. An aluminum deflection protractor has replaced the old plastic deflection fan, formerly used on an optional basis by many units. Ranges and deflections can be read directly from the firing chart with this instrument.

The paper graphical firing table (GFT) for use in instruction is another new item. Computed for both "with" and "without extension" of the M328 and M329 shells fired from the M30, the table may also be used for the WP M2 and HE M3 shells when fired from this mortar. The GFT provides time of flight, drift and elevation. It also indicates the proper charge for a specific range. A 33⅓ yard scale is used for opening and closing the sheaf. To simplify operations, the GFT is based on a constant elevation of 900 mils. It is expected that manufactured GFT's will be available soon.

We also use plotting needles in fire direction to locate the positions of platoons, base points and targets. To provide a scale in making shifts requested by the observer we use a paper target grid similar to the grid on a plotting board.

There is a 30 meter steel tape that has replaced the old 100 foot tape for use with the metric system employed in mortar gunnery. (See Figure 2.)

Q. What are some of the new techniques used by mortarmen?

A. Let me outline some of the more important techniques now being employed.

1. Since meteorological corrections have been found to be extremely valuable when registrations cannot be conducted, we now compute and apply corrections determined from meteorological message. The meteorological data for the 4.2 inch mortar and the 105mm howitzer are identical, enabling us to secure weather data that has already been collected by the artillery.

2. Center of impact registrations

The Five Basic Loads of the 4.2″ Mortar

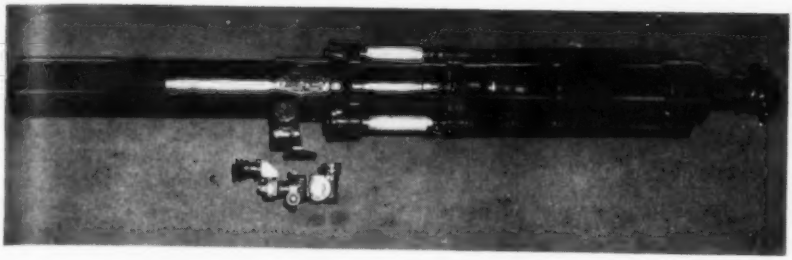


Figure 1

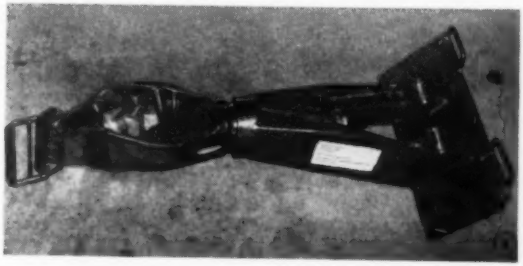
(A) Sight and tube

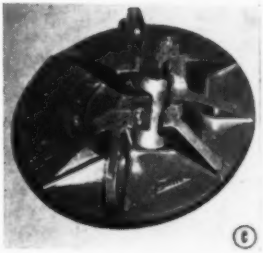
(B) Bridge

(C) Rotator

(D) Base plate

(E) Standard





are used during night operations. Survey data is necessary, or the survey locations of at least two observation posts must be known. Six rounds are fired individually with the same deflection and charge. Azimuths are then determined to center of burst from each OP by the use of an aiming circle. Corrections are determined by comparison of the known point, by survey and by the fired-in-point.

3. Night registration may be conducted under illumination from 81mm mortars, 4.2 inch mortars or artillery. The procedures for night registration are the same as those used in daylight operations, except that additional coordination is required in the use of the illuminating mortars.

4. Precision fire is now used for registrations and destructive missions by heavy mortars. Precision registrations are preferred to simple registrations in order to determine a more accurate center of impact. Using the same principles, destructive missions can be fired effectively on stationary targets with a single mortar.

5. Altitude corrections are now handled a bit differently. Altitude difference is transcribed to range corrections by adding or subtracting from the chart range. This range correction is determined by using an altitude difference card on which the necessary corrections have been computed for each range and altitude.

6. Corrections for drift and deflection are handled by a deflection correction scale. Mortars are laid to compensate for an average amount of drift which has been predetermined to be 47 mils. The deflection correction scale is started with zero at base point range. The remainder of the scale is worked out with the GFT, based on range differences for each drift block on the GFT.

Q. Have the fire commands remained the same?

A. Not entirely. The following elements are used in the new fire command:

Elements	Example
Mortars to follow	Platoon
Shell	HE
Fuze	Q
Mortars to fire	# 1
Number of rounds	1 RD
Deflection	DF 2867
Charge	CH 12
Time	Note: When fuze setting is quick, no time element is announced.

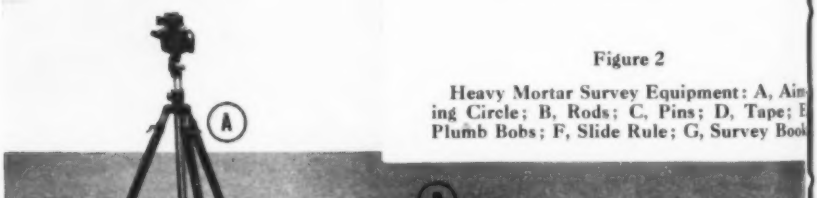


Figure 2

Heavy Mortar Survey Equipment: A, Aiming Circle; B, Rods; C, Pins; D, Tape; E Plumb Bobs; F, Slide Rule; G, Survey Book

Elevation .....Elev. 900

Elevation is the command to fire, unless some other command such as "DO NOT FIRE" or "AT MY COMMAND" is announced.

SURVEY

Q. You've mentioned survey several times. Just how important is it?

A. Very important, since it has been proven that by using survey, the fires of a whole company can be massed on a single target quickly and accurately with a one-gun registration.

Fires can be . . .

Accurate surprise fire on observed targets can often be obtained by a simple shift and fire for effect. Survey also provides more effective unobserved interdiction and harassing type fires and facilitates exchange of target area locations with artillery units.

Q. What type of surveys are used?

A. Simple surveys. The chief instruments used are an aiming circle (to measure vertical and horizontal angles) and a steel tape (to measure ground distances). The military slide rule and logarithmic tables are used to compute the desired information from the angles and distances measured in field work. With this equipment, an accuracy of 1/500 is achieved, i.e., a maximum one yard error in every 500 yards. A new logarithmic and trigonometric table is being developed by The Artillery School which will determine logarithms to six places and the functions of angles read to the nearest tenth of a mil without interpolation. This should help us to make computations faster and more accurately.

FORWARD OBSERVATION

Q. Please bring us up to date on forward observation.

A. Let's see, we've mentioned precision fire, center of impact registrations and illuminated missions. I think we can make our discussion more complete, though, by adding a few other changes.

1. Experience has shown us that there is an overdependence on wire and telephone for communications. Since this could be disastrous if wire lines were cut, we are placing added emphasis on the use of radio.

2. We are devoting a considerable amount of time to air-observed missions using helicopters and liaison aircraft.

3. The initial fire request has been changed somewhat. When using the shift method of locating a target, the reference point is given first, then the observer target azimuth, then shift.

massed quickly

When coordinates of the target are given, they are followed by the observer target azimuth. Both new orders facilitate plotting at the fire direction center.

UNDER STUDY

Q. It's rather obvious that heavy mortars are continually being refined and improved. Can you tell us about some of the items now being developed?

A. Research and development is being conducted for the purpose of obtaining a lighter mortar to replace the 4.2. If such a weapon is perfected, it is expected that its range capabilities will equal or exceed that of the 4.2.

A new version of the M34 sight unit is also under development. It is planned for use with light, medium and heavy mortars. *(Continued . . .)*

To simplify the complicated procedures of calibration or bore sighting, a device is currently being tested which will fit all medium and heavy mortars.

Another important new development is the GFT fan. It is a modification of the present deflection protractor. With the GFT fan, the charge, time of flight, drift and elevation are read directly from the range arm and there is no need for a GFT. When used, the fan will speed fire direction procedures and possibly eliminate some personnel from the FDC.

HEAVY MORTAR GUNNERY OFFICER'S COURSE

Q. Can you tell us something about the Heavy Mortar Gunnery Officer's Course?

A. The course, designed for company grade officers, consists entirely of instruction on the 4.2 inch mortar: its gunnery, tactics and communications. Conducted four times a year, the course is limited to 50 students, graduates of OCS, BIOC or ACO courses given at The Infantry School. The officer must be on active duty, but not necessarily assigned to a heavy mortar unit. Reserve officers are eligible if they come on active duty for the course. Here's a breakdown of the course:

In this, his second *Quarterly* article, CAPT KENNETH D. MERTEL brings us up-to-date on the latest developments and changes in the field of heavy mortars.

Capt Mertel received an OCS commission in 1945 and was integrated into the Regular Army the following year. He served as a company commander and battalion S3 in Korea and is currently assigned to the Mortar Committee, Weapons Department, TIS.

WEAPONS DEPARTMENT

Hours	*Subject*
72	Survey
79	Fire Direction Procedures
31	Forward Observation Procedures
28	Mechanical Training
210	

OTHER DEPARTMENTS

Hours	*Subject*
27	Tactical Department
14	Communications Dept.
5	Staff Department
2	School Brigade
18	School Commandant
66	

The course qualifies officers to become platoon leaders, gunnery officers, reconnaissance officers or company commanders of heavy mortar companies, but more important, it gives us informed mortarmen . . . mortarmen who are able to set the pace for the heavy mortar's parade of progress.

Figure 3

New 4.2" Mortar Round

pt Walter L. Frankland, Jr.

communications . . .

patrol lifeline

Adequate communications are essential to the success of any patrol. Our past failures in this aspect of patrol operations have, for the most part, been the result of poor planning. There is no reason to perpetuate these errors. With detailed planning and a knowledge of proper communications procedures, we can be reasonably certain of having the means necessary for communication during patrol actions.

No single method of communication is perfectly dependable. Wire can be cut by the enemy and is vulnerable to wear and weather. Radio

presents a security problem and is subject to jamming. Messengers are subject to all the hazards of the battlefield. The patrol which depends entirely on any one means of communication may find itself in an untenable position.

During the planning phase of a patrol operation the patrol leader considers all types of communication. His plan should include a complete consideration of radio, wire and messengers—as well as voice and pyrotechnics.

Wire Communication

If the patrol leader elects to use wire, he must make an accurate estimate of his route and the distance to be covered. If sufficient wire is not available he may have to modify his plans. When estimating the amount of wire needed, he must allow for terrain variations and give himself a margin of safety to compensate for the differences between map and ground distance. It is advisable to lay wire as far forward of friendly lines as possible prior to the actual departure of the patrol. We must remember, though, that the enemy may try to ambush a patrol by following its wire. Wire communication extending beyond the surveillance of the main elements of the unit furnishing the patrol is extremely vulnerable to this counter-patrol measure.

When wire is used as a method of communication, the patrol leader has two choices open to him.[1] He may use an EE8 field telephone (after disconnecting its ringing circuit) or he may use the TS10 sound-powered phone. When the latter is used, the clips must be attached to the wire and taped to prevent a short. While this is a normal procedure, it is especially necessary on a patrol and is frequently overlooked until it is too late. A minimum of two extra batteries should be included as patrol equipment when the EE8 is used. Before the patrol departs, it should be SOP to check all phones on a circuit that is known to be good.

When the wire dispenser MX 306 is available, it is advisable to attach two or three of the dispensers to one packboard. If the dispensers are fastened separately, the patrol members will have little difficulty in cutting the dispensers loose when they become empty. The wire in the dispensers should be connected before the patrol departs. This will prevent the patrol from having to stop in order to splice wires. If more wire is required than can be carried on a single packboard, splices on additional dispensers should be prepared before leaving friendly lines.

Every member of the patrol should be capable of splicing wire at night, and these splices must be taped. The usual night moisture, not to mention heavy rain or a rice paddy, is capable of shorting a circuit through a bare splice.

No matter how thoroughly the patrol leader has checked his wire equipment, he must be certain that his phone operators have a complete understanding of their jobs. Someone must be alert at the telephone during the entire time the patrol is out; vital messages may be received at any time.

Radio Communication

Radio sets require the same careful attention that we give to wire equipment. Radio is more technical, though, and additional experience and training are mandatory for the radio operator. A good patrol leader checks his radio opera-

[1]These choices do not always rest with the patrol leader. Considerations from which the commander's patrol plan is drawn will probably not be available to the patrol leader. Care must be exercised not to overburden a patrol, thus placing its mission in jeopardy.

Reduces the Possibility of a Break in Contact

As a company commander and a battalion S3 in Korea, CAPTAIN WALTER L. FRANKLAND, JR., (USMA 1946) observed that unsuccessful patrols were often the result of inadequate communications. His article offers a number of proven tips for avoiding communication errors in the future.

Captain Frankland is presently assigned as Assistant Public Information Officer at the United States Military Academy.

tors and his equipment well in advance of the patrol's departure. He sees to it that extra batteries are available and that the men have practiced changing batteries at night. Rehearsal of such simple, often-overlooked details increases the likelihood of a successful mission.

Correct radio procedure should be stressed by the patrol leader. During training it is not always necessary to actually transmit over the radio; however, each member of the patrol should be drilled in proper procedure. In order to maintain security at night, radio volume must be kept low. The radio operator should be cautioned to keep the receiver close to his ear at all times and to maintain a constant alert.

Weather and terrain barriers can be overcome by having the radio operator occupy a position in line of sight with the base radio (usually company or battalion). It is difficult to locate a good position at night, so a number of locations may have to be tried to insure good reception. In attempting to overcome weather and terrain difficulties, it is necessary to keep the radio's antenna perpendicular to the earth's surface. This alinement will help to increase both transmission and reception.

Metallic objects like tanks and trucks may interfere with radio reception. The radio operator must take these factors into consideration when he is preparing his position. Overhead transmission wires should be avoided, too. It is also important that the radio be kept dry.

Messengers

The messenger is our most basic means of communication. Time and again, he has proven his reliability in time of emergency. With this in mind, the patrol leader should establish a pre-arranged plan for his use. Certain men should be designated as messengers, but all others should be told that they may be used when necessary. This will enable each man to think about the route he might use.

Signals

Sound and visual signals should be included in the patrol plan. If emergency signals of this type are used, they must be consistent with Signal Operation Instructions. When special codes or signals are devised for use, all patrol members should be thoroughly familiar with their meaning and method of employment. The importance of signal and code familiarization was proved strikingly in Korea where, quite often, only key personnel had any knowledge of emergency signals. Patrols that were left without leaders and without the usual communications were sometimes completely isolated. Many of these patrols were rendered ineffective even though flares and code signals were available. Since the majority of the patrol members did not know what the signals meant, or were unaware of their existence, the flares were useless as a means of communicating.

If rifle flares are carried, sufficient cartridges and launchers should be provided. Patrol members carrying flares should place all flares of one color or type in one specific pocket in order to be able to distinguish them at night. This

should be a part of the patrol's standing operating procedure. If a flare-carrier becomes a casualty, this system will eliminate the loss of time involved in searching for and identifying flares.

A patrol chain of command may not be considered a regular part of communication planning, but it is necessary. The patrol leader is responsible for communication, and he should incorporate a chain of command as part of signal matters. A well-defined chain of command reduces the possibility of a break in contact.

Signs and countersigns require careful planning—every patrol member must know them. The patrol leader should check the password with the patrol members immediately before departure. If the patrol is to be out longer than the duration of the initial password, a special code should be devised to provide the patrol with a safe return through friendly lines. This code should be coordinated with the unit or units the patrol will pass through.

Weapons are not the sole tools of war. An experienced commander would not give a unit a difficult mission to perform without supplying it with enough equipment to guarantee success. By the same token, a patrol leader must recognize that effective communications are the lifeline of a successful patrol. A defective radio, an untaped wire or a broken field telephone can be as disastrous to a patrol as the jamming of a rifle at a crucial moment.

Answers . . . to the Quiz

Possible score 100 points. Expert 90-100, Sharpshooter 70-80, Marksman 50-60, Recruit 30-40, and Bolo 0-2. For complete detailed discussion of the answers check the references listed below.

1. b. (Par. 99, TM 57-210.)
2. c. (Par. 67, FM 5-25.)
3. The driver or operator. (Par. 2c, TM 9-2810, C2.)
4. Depress the brake pedal momentarily at intervals while the vehicle is in motion. (Par. 68, TM 21-305.)
5. c. The stakes are placed out 150 mils apart. You can cover 150 mils to the right of the outside right stake and 150 mils to the left of the outside left stake. (Par. 77, FM 23-85.)
6. Yes. The telescope is a secondary sight. (Par. 71, TM 9-7012.)
7. (1) The platoon column formation.
   (2) The platoon line formation.
   (3) The platoon wedge formation.
   (4) The platoon vee formation.
   (5) The platoon echelon (left or right) formation. (Par. 120, pages 114-116, FM 7-10.)
8. A *final protective line* is a predetermined line of grazing machine gun fire capable of being fired under any conditions of visibility. *Final protective lines* are a part of the *final protective fires* phase of defensive fires. *Final protective fires* are planned to break up an enemy assault by placing a band of concentrated fire across the front of the battle position just forward of the main line of resistance. (Pars. 53 and 236, FM 7-15.)
9. c. His first names, surname, rank, serial number and date of birth. (Article 17, Geneva Convention, 12 August 1949.) Terminology in U.S. Army substitutes "grade" for "rank" and "service number" for "serial number."
10. At least 33 per cent of the applicatory stages of all tactical training movements and operations must be conducted during the hours of darkness, stressing individual and unit night discipline. (Par. 16a (2), ATP 7-301.)

Prepare For Inspection

We've received a number of requests from officers and non-coms for a really good series of inspection checklists. Here are four of the best checklists we could find. We have a number of others on file and will be glad to keep printing them if the demand continues. You may have to modify these to conform to your unit SOP's . . . so we're looking forward to your comments.—Editor

BARRACKS

Check to see that:

1. Outside area is policed, grass cut, fences in good repair and over-all appearance is attractive.

CHECKLISTS SAVE VALUABLE TIME

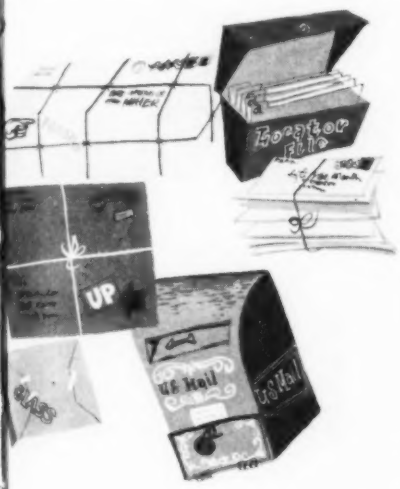
2. Broom and mop racks are in good repair and the brooms and mops are properly cleaned and placed in racks.
3. Furnace room is properly policed and no fire hazards are present.
4. Fire extinguishers are clean, filled and ready to operate.
   (Date of last refilling and inspection in accordance with local fire regulations should be noted on each extinguisher.)
5. Fire exits are properly marked; fire escapes are unlittered and in good condition; fire department phone number, along with building number, is conspicuously posted.
6. Floors are clean and well cared for.
7. Floor space is sufficient. (Normally 60 square feet per man, as stated in FM 21-10.)
8. Drinking fountains are clean and operational.
9. Field equipment is properly stored when not in use.
10. Individual equipment is properly displayed in wall lockers and foot lockers.
11. Clothes are hung in accordance with unit SOP.
12. Bunks are made up uniformly and properly alined.
13. Footlockers and shoes are alined.
14. Windows are clean and unbroken; window shades are clean and in good repair.
15. Screens are in each window, close fitting and in good repair.
16. Trash and butt cans are clean, suitable, adequate and neatly arranged.
17. Lights are not burning unnecessarily and there are no burned-out or missing bulbs.
18. No unauthorized electrical connections are being used.
19. Proper heat and ventilation are provided; windows are open on both sides of the room according to local health regulations.
20. Cleaning supplies are neatly stored in a locker or on a shelf.
21. Latrine orderly is present, reports properly and knows his duties.
22. Wash basins are clean and have stoppers; faucets are working properly with no drippage.
23. Mirrors are clean and their surface is unmarred.
24. Razor blade receptacles are provided.
25. Commodes are clean and in good operation; toilet paper is provided for each commode.
26. Showers are in good operating condition, with no drippage. Duck boards, if present, are scrubbed, sunned and used in pairs according to SR 41-60-1. Shower room is scrubbed and all soap scraps removed.
27. Necessary repairs on the building or plumbing are being made or have been requested on work orders.

INSPECTION OF UNIT MAIL ROOM

Check to see that:

1. The unit postal officer and mail clerk each have a copy of SR 65-220-1.
2. The unit postal officer, unit mail clerk and alternate mail clerk are designated in writing by company order.
3. The unit mail clerk has a DD Form 285 (authorization for Unit Mail Clerk) in his possession.
4. Only authorized personnel (1 and 2 above) handle the mail.

5. The mail room is properly secured, suitable, orderly and used for mail handling purposes only.
6. The outgoing mail box is protected from the weather, securely locked and constructed so the mail cannot be removed from the slot.
7. Mail is delivered to the addressee only, in person, or his agent designated by him in writing.
8. Out going mail is checked for complete return address.
9. Examples of proper form of address are posted on the company bulletin board.
10. "Missent" and "No Record" mail is properly handled.



11. The mail clerk is familiar with the procedure for handling mail when addressee is AWOL, deceased, TDY or transferred.
12. The unit locator file is current with cards filed in alphabetical order.
13. The quantity of mail on hand and the dates of postmarks indicate that mail is being delivered promptly or disposed of in accordance with current regulations (SR 65-220-1).
14. Registered and insured mail is delivered promptly and receipts are obtained therefor.
15. The record and receipt for registered and insured mail, DD Form 434, is prepared in sufficient copies.

UNIT ADMINISTRATION

Check:

1. Correspondence and publication files to see that:
   a. They contain copies of correspondence originating within the unit and the originals or a summary of all incoming correspondence.
   b. Correspondence is numbered serially beginning with January each calendar year.
   c. Each separate communication is marked plainly with its number in the upper right hand corner of the first page.
   d. Files are being disposed of in accordance with SR 345-250-40.
   e. Correspondence is filed in 8½ by 11½ plain envelopes with the file number, date and subject typed or written in ink on the outside.
   f. Military publications from higher headquarters are filed in numerical sequence and kept separate according to type of publication and originating headquarters.
2. Duty rosters to see that:
   a. They are prepared on DA Form 6.
   b. They contain only the names of persons required to perform the duty involved (AR 220-45).
   c. They cover all work details except authorized special duty details.
   d. They list names alphabetically by grade.
   e. They are prepared with ink or indelible pencil.

f. Names of newly joined EM are being added to the end of the duty rosters within 24 hours for the duties they will perform.

g. Personnel not available for duty because AWOL, in arrest or confinement, sick "not in line of duty," or otherwise not available as a result of their own misconduct are being charged on the duty roster for such days as available for duty.

h. The numbering system is resumed in sequence for persons returning from authorized absence not due to misconduct.

i. Persons off duty for the longest period of time are being detailed first for such duty.

j. They are consistent with entries in the MR with regard to non-availability for duty for reasons of leave, temporary duty, illness in line of duty, AWOL, arrest or confinement and sick "not in line of duty."

k. Only authorized abbreviations are used.

l. Completed rosters are being cut off at the end of the calendar quarter and sent to records holding area.

m. The correct number of days since duty was last performed is being continued from old to new rosters.

n. Consolidated weekend - weekday - holiday rosters are maintained whenever practicable.

o. Consolidated rosters for weekend-holiday entries are filled out in red.

3. Morning reports to see that:

a. They are typed when possible, otherwise printed legibly in block capital letters using indelible pencil or ink.

b. Reports of more than one page are stapled or otherwise clipped together in the lower left hand corner.

c. All the required data are on each page.

d. Only authorized abbreviations are used.

e. Incorrect entries are deleted by typing or drawing a line through the entry and are initialed by the individual certifying the morning report.

f. The words NO CHANGE are entered in capital letters in the remarks section when appropriate.

g. "Usual organizational duties" is entered on the 10th, 20th and last day of the month under the Record of Events section if no unusual events have occurred.

h. Complete service numbers with proper prefixes are used.

i. Jr., or similar designation appears after middle initial, if appropriate.

j. Remarks are clear and concise, leaving no doubt as to their meaning.

k. Gains and losses are balanced against the previous day's strength report.

WHEN IN DOUBT - USE A CHECKLIST

l. Proper entries are made for individuals placed on temporary duty, sickness involving change in duty status, leave, AWOL, change in grade or primary MOS.

m. Results of courts-martial which change the status of individuals are properly entered.

n. Personnel gains and losses are entered on the day they become effective.

o. Remarks concerning assigned gains are entered on the line immediately under the name and indented two spaces.

p. A copy of a document is attached to each copy of the MR when a group remark refers to "copy attached."

q. Remarks pertaining to a group less than ten are entered on the line immediately under the last name of the group and indented two spaces.

4. Orders to see that:

a. Numbering is in sequence during a calendar year.

b. The commander has properly authenticated them.

c. They bear correct headings.

d. Promotions or reductions cite the appropriate regulation and paragraph of the regulation.

e. A record and a reference set are maintained.

5. The unit fund to see that:

a. It is officially designated as required by SR 210-50-1.

b. A council was appointed by the unit commander.

c. The council consists of not less than three members with at least one officer and at least one noncommissioned officer.

d. Proceedings of council meetings are properly recorded, signed and filed on the left side of the voucher file for that month.

e. An acting custodian is designated if the custodian has been absent for more than five but less than thirty days. If a custodian is absent for a period exceeding thirty (30) days, another custodian will be designated and the fund formally transferred.

f. If an acting custodian has been appointed, the receipt is prepared in triplicate, the original to be retained with the permanent records of the fund and a copy for each custodian's personal file.

g. A certificate of transfer was properly prepared and signed when the unit fund was transferred.

h. Receipts are properly and promptly deposited.

i. Inspections and audits are conducted periodically as required.

j. All vouchers contain an explanation to include date, description of item received or purchased, and amount paid therefore.

k. The signature of the custodian is on each voucher.

l. All transactions are recorded immediately in ink and pertinent records are filed promptly.

m. The initials of the custodian are on all changes in council book, vouchers and records.

n. All deficiencies and irregularities as disclosed by the auditor are corrected and filed in the council book.

o. Certificates of nonavailability for issue have been obtained from the appropriate supply agency prior to the purchase of articles or services

normally available for issue, and are attached to the vouchers as supporting documents.

p. Basic and supplemental records are filed and maintained properly.

q. Vouchers are numbered consecutively beginning with the calendar year.

r. Vouchers are prepared in support of each cash receipt or disbursement.

s. All disbursements are authorized by AR 210-50 and SR 210-50-1.

t. Bills are paid taking advantage of all discounts possible.

u. Bank statement and cancelled checks are obtained from the bank at the close of each month and the statement is properly recorded.

v. Financial statements are posted on the bulletin board at least once each three months.

6. The individual sick slip to see that:

a. It is destroyed as soon as it has served its purpose, unless required by an officer exercising special court-martial jurisdiction.

b. The unit commander's section is prepared in all cases where the line of duty determination is other than "yes" or "no" (EPTE).

c. Line of duty entries in the unit commander's and medical officer's sections are made in accordance with SR 40-600-5.

d. Unit commander's section is signed by the unit commander personally if it has been prepared.

e. Medical officer's section is signed by the medical officer who actually examined the patient whenever:

(1) An entry is made concerning line of duty.

(2) Other than "duty" is checked as disposition of the patient.

(3) Additional instructions are entered under remarks.

f. When the officer exercising special court-martial jurisdiction has determined that a formal "line of duty" investigation is not required or has discontinued a formal investigation to make an administrative determination, such determination including all circumstances involved, has been entered on the slip.

g. If action has been taken according to (f) above, the slip has been filed permanently in the field military 201 file of the individual concerned.

7. The unit punishment book to see that:

a. A record of punishment under Article 15 is kept in the orderly room under the supervision of the unit commander.

b. The record is kept in book form alphabetically indexed, with a separate sheet for each individual who has been awarded punishment.

c. The record shows the name, service number, grade and organization of the offender.

d. The record is maintained on DD Form 789 and shows the following:

(1) Date, place and nature of offense (in sufficient detail).

(2) The punishment imposed (in sufficient detail).

(3) Authority for imposing punishment.

(4) Date offender was notified of the imposition of punishment.

(5) Whether or not the offender desired to appeal.

(6) The decision of higher authority if an appeal was made.

(7) Mitigation or remission of punishment, if any.

(8) The initials of the unit commander and the offender.

e. Only authorized punishments are being imposed.

f. Old punishment books are being disposed of in accordance with SR 345-250-40.

g. If an NCO has been reduced under Article 15 the record shows that the officer imposing punishment is of the grade of major or above and either he or a subordinate commander has the authority to promote to the grade from which reduced.

DAY ROOM

Check to see that:

1. Outside area is adequately policed.
2. Furniture (couches, easy chairs, hassocks, floor lamps, waste baskets and ash trays) is adequate and in good condition.
3. Interior is attractively painted and arranged with suitable curtains or drapes and framed pictures.
4. Floor is clean and well cared for.
5. Radio, television set and record player are in good operating condition (if applicable).
6. Reading material, including current magazines, is available.
7. FM's and other military publications are available and there is an accurate system of accounting for them.
8. Writing material, including tables with proper lighting and stationery, is available.
9. Display board is current and neatly arranged in accordance with SR 355-20-1.

10. Off limits map is posted.
11. Necessary equipment for billiards and ping pong (if applicable) is in good condition.
12. Individual or small group games such as checkers are present.
13. Satisfactory arrangements for security of the day room property, particularly at night, are in effect.

In all ages, man has, during peace, turned his mind to the inventions of mechanical means for winning wars. Some of these inventions have served most practical purposes, but none of them has replaced the Infantry. They have all either served the doughboy or disappeared.

—Maj Gen James G. Harbord

Wheels for War

David L. Cohoe, Jr.

ON the night of March 9, 1916, Pancho Villa swooped down on the garrison town of Columbus, New Mexico. His bandits were driven off at dawn, but they left behind them a town in flame, American citizens and soldiers killed. The raid was a challenge we could not ignore.

The next day, President Wilson ordered a Punitive Expedition to follow Villa into Mexico. This meant problems of transportation...problems of supply. Villa counted on clumsy wagon trains to slow up his pursuers. The faster the cavalry rode, the farther they outran their supplies; the longer

they followed Villa, the longer their supply line grew. But the US Army found the answer—trucks.

The army had been as curious as the general public when the first crude automobiles appeared. Curious—but skeptical too, since the glamor of the cavalry was long established, and cavalrymen were prone (even dedicated) to scoff at the horseless carriage. In 1899, the army bought its first motorized vehicle — a battery-powered electric auto. Its promising career was cut short by an explosion. The army continued to purchase and test gasoline, steam and electric vehicles. But their mechanical shortcomings—aggravated by the miserable roads of the time — only provided the cavalry with further excuse to give these newfangled contraptions the horselaugh.

Trial by Fire

Nevertheless, with Villa retreating far into the hills, the army decided to gamble on the truck. Chassis were purchased in Michigan, hurriedly assembled and rushed to the border. There they were fitted with wagon bodies. Civilian drivers and mechanics were recruited: the professional soldier knew nothing of trucks and did not want to learn. Ten days after the raid — only four days out of Michigan — this motley procession of wagon-trucks and civilian soldiers crossed the border in the wake of Pershing's troops.

Throughout the campaign, the trucks shuttled back and forth, their number gradually increasing. The going was rough and truck mortality high. When ruts made sandy roads impassable, the trucks drove over yucca plants and sagebrush to smooth a new one. In places, the series of roads stretched half a mile across. The trucks kept running. When rains turned sand to quagmire and brooks to unbridged floods—still the trucks kept running. Finally, soldiers were assigned to truck companies to work as relief drivers and to learn how truck trains work. By the end of the campaign, several trains were run by military personnel. The truck had joined the US Army for an indefinite enlistment.

Though Villa was never captured, his troops were scattered and victory was ours—a victory which owed much to the persistency of the trucks and their patch-it-with-chewing-gum drivers. Even the cavalry conceded that the army truck had a future—if only hauling fodder for their mounts!

Growing Pains

The Punitive Expedition proved the usefulness of trucks in war, and provided a dress rehearsal for their role in World War I. But we still had much to learn. Dramatic proof of this was the confusion of our motor transport in France.

For contrast, let us sketch the setup of French motor operations. French General Headquarters included an agency called the "Direction of Motor Transport Service." It had the job of scheduling and routing all motorized movements. This agency had at its disposal a large pool of vehicles, the "Transport Reserve." Thus headquarters not only controlled the movement of assigned vehicles, but could supplement large-scale movements with vehicles from its own reserve. Moreover, French procurement policies and maintenance facilities were excellent.

This system was scarcely completed when the Germans subjected it to its most rigorous test. The army of the Crown Prince attacked Verdun. French railways collapsed under the loads of ammunition, supplies and reinforcements. A single road, only seven yards wide, remained. Within a week, 3000 trucks from the headquarters reserve were running along this "sacred way." Soon there were 8000, passing sometimes at five second intervals, and this flood was

The Punitive Expedition proved the usefulness of trucks in war.

maintained for seven months. Verdun was saved.

Earlier in the war, the French had been forced to resort to a somewhat unusual "field expedient." German advances threatened Paris itself, but the French commander found himself unable to transport reinforcements to the front lines. Undaunted, he commandeered a fleet of the notorious Paris taxicabs, together with their villainous drivers. These raced back and forth between Paris and the front, carrying 20,000 men in a single trip. After the war, this incident was not forgotten. For years, the US Army flirted with the taxicab. One enthusiastic taxi executive burbled in 1933, "I believe that the nature of the business of a taxicab company and its type of organization lends itself very well to utilization as a military unit, and I have an idea that if you give our men a thousand of our eight cylinder juggernauts, they would go over the top much to the consternation of the enemy—and what a grand advertisement it would be!"

When the US entered World War I, our wheels were mostly on paper. Each service purchased its own vehicles, selected and trained the drivers. Artillerymen drove ammo trucks, the Quartermaster Corps drove supply vehicles, the Medical Corps drove ambulances. At first each AEF division was issued its own brand of vehicle: the 1st Division was issued only British AEC trucks, the 2d Division only Packard trucks and so on. But demand soon exceeded the manufacturers' supply, and everyone set

about buying anything with four wheels able to move under its own power. During the war, our armies rolled in over 162 different makes and 216 different models of wheeled vehicles—many of them foreign. They did not roll very well, for three major reasons.

First was the insoluble problem of supply. A complete stock of spare parts would have included 444,000 items—of which 80 per cent were not interchangeable! The Quartermaster Corps strove valiantly to meet the clamor for replacement parts, but the outcome was usually a deadlined vehicle or the theft of the required part from a similar vehicle in another unit. This cannibalism developed into a sort of SOP, immortalized in the following lines from *Stars and Stripes:*

The Absent Quad

The Quad truck waits without, my Lord!
Without what, Captain Bunk!
Without the steering arms, my Lord;
Without a lot of junk;
Without a vulcanizing patch,
Without a nut or screw;
She's minus top and wheels and valves,
She's shy a body, too;
Without a spring, a brake, a yoke,
Without a horn to blare—
Good gracious me, it beats the Dutch
How much there isn't there!

We took her to the park repair,
As perfect as could be,
Just wanted to adjust some screws,
And now—ah! woe is me.
They swiped the lining brake (ten feet)
They stripped the casings clean,
They monkeyed with her primer—
Oh, they acted awful mean!
But one thing saves the day, my Lord!
Our records can declare,
That though we didn't get a Quad,
The US number's there!

The second source of confusion was the absence of any central control over transport operation. When a commander discovered—to his surprise—that some of his trucks were running, he frequently found that a traffic tangle blocked the roads he had intended to use.

Third was our failure to establish an efficient maintenance system. Minor repairs were performed by mobile shop trucks like those of the Punitive Expedition. Major repairs were carried out in "motor parks"—an idea borrowed from the French.

The plan was sound, but the parks were set up too late in the war to do much good.

In 1918, the War Department established the Motor Transportation Service as a branch of the Quartermaster Corps. But the chaos was too great for any subordinate branch, and the Motor Transportation Corps emerged as an independent service. For the first time, some of the men who really understood motor transport found themselves free of the dusty supply rooms and out in the field.

The last year of the war saw another important advance, the formation of the Standardization Board. The board's first move was to call together the country's leading automotive engineers and request designs for a series of "standardized" military vehicles. Only 90 days later, the first Class B truck made its appearance and met with immediate approval.

The method which produced the Class B was unique. The proposed vehicle was divided into units, and the design of each unit assigned to a committee of experts. Thus there were committees for the engine, suspension, frame and other parts, each committee composed of specialists in the design of its unit. Competition between committees was fierce: no one wanted to be the weak link in the chain. Experienced manufacturers were selected for each individual unit, and "neutral"

Traffic tangles in World War I frequently made motor transportation impossible.

manufacturers[1] assembled the completed vehicle.

The Class B truck was a distinct success. About 10,000 were built in the first series, and about 10,000 more in the second. The original tonnage rating of 3½ tons proved too modest: simply adding heavier springs and brackets raised it to 5 tons. The links in the chain had been almost *too* strong! The same designers designed Class A and AA trucks—1½ and ¾ tons respectively—but these were never produced. So great was the demand for these tonnages that the government gave contracts to civilian manufacturers before the designs were finished.

So ended World War I. Our trucks deserved—and got—little credit for the victory. The cavalry joined the clamor of disapproval. But they had discovered that the pace of modern war demanded too much of horse-drawn artillery. The famous French 75 proved almost useless—until it was found that even the lighter trucks could tow it most efficiently. The cavalry gulped and shifted uneasily in the saddle. The truck was here to stay—but was the horse?

Giant Steps

Our peacetime plans did not call for an extensive Motor Transportation Corps, and its activities were returned to the Quartermaster Corps. Remembering the lessons of the war, the Quartermaster Corps quietly set to work to make sure that what had happened in France would never happen again.

(Continued on next page)

[1] i.e., manufacturers who were not at that time supplying the government with their own vehicles.

A 1¼ ton truck on a Group I chassis.

The army's testing center for vehicles was Camp Holabird, Maryland. Here, experiments produced an impressive list of new developments. Pneumatic tires were found to be superior in every way to the solid rubber tires of the Class B—so the tires on every army vehicle were changed. Four wheel drive (used on some World War I trucks) was pronounced a necessity for future combat vehicles. Dual rear axles were tested and adopted in the Class C truck. Four wheel steering, high overall gear reductions, embryonic half-trucks, engine-driven generators feeding four electric motors which in turn drove the wheels—all these, and more, were tried. Throughout the experiments, test results were carefully screened and the best features incorporated in the design of the "Standardized Fleet."

The Standardized Fleet was the ideal vision of the army's designers, their solution to the problems posed by World War I. The Fleet consisted of some 20 basic chassis. These were divided into 5 groups by tonnage rating: Group I included 1 and 1¼ ton chassis, Group II included 2 to 3 ton chassis and so on. All major unit assemblies (engine, axles, wheels, etc.) were interchangeable within each group, and any chassis in the group mounted a variety of bodies. For example, a Group I chassis might become anything from a 1¼ ton truck to an armored car. Thus, we had a complete range of vehicles from the 1 ton ambulance to the 10 ton truck, requiring spare parts for only 20 chassis.

In 1932, the government appropriated a large sum for new vehicles, in order to bolster the national economy and re-

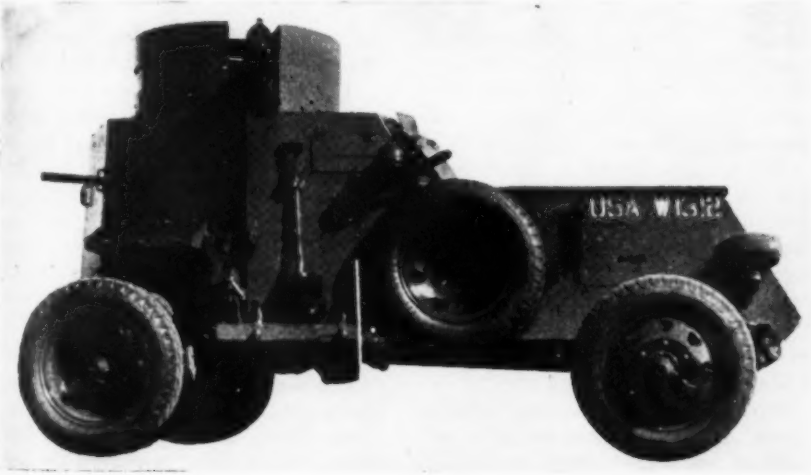
place the well-worn Class B's. The Standardized Fleet was rushed to completion and pilot models were demonstrated at Camp Holabird. Each in turn performed the impossible feat of climbing a 65 per cent grade under rated loads. The results of the tests were satisfactory in all respects: the few defects which appeared were soon eliminated. But the civilian manufacturers whose models competed with the Standardized Fleet were in dire need of the government contracts, and they received them. The work of the army's designers was not wholly wasted. In the automotive industry, the practice of buying individual units from different manufacturers was stimulated by the Class B truck and the Standardized Fleet. Army Ordnance is even now studying the possibility of buying vehicle components directly from suppliers and shipping them to a single contractor for assembly. The army has continued to stress interchangeable parts. But the Standardized Fleet itself has been abandoned, and its trucks have rusted away.

Era of the Red Ball Express

If the government turned to the civilian manufacturer, its trust was justified. Between the wars, the American automotive industry had grown to giant size, easily dwarfing its competitors abroad. When war clouds began to gather in 1937, Ordnance took the helm of our wheeled vehicle program. Under its direction, the automotive industry swung its might to the task of developing and producing new vehicles. Not wholly new, however—these were existing civilian models, specifically modified to do a wartime task. They did it. Because of the size and efficiency of our automotive industry, army transport was prepared for World War II. It accomplished its mission because the army could exploit advances which industry had pioneered.

An interesting footnote to the story of our vehicles in World War II is the part played by The Infantry School in developing the jeep. The first experiments with a light command-reconnaissance vehicle took place at Fort Benning. Inspired by the results of these tests, Captain Howie, an instructor in The Infantry School's Tank Section, designed the Howie machine gun carrier. This

The interchangeable Group I chassis as an armored car.



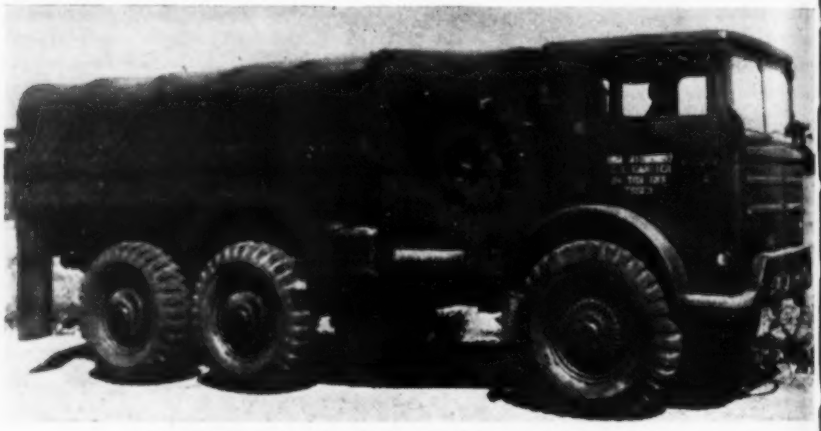
was a strange, self-propelled gun mount on which rode a gunner and driver, stretched out prone. Needless to say, the machine gun carrier was not adopted by the army. But the interest aroused by Benning's mechanical marvel furthered the cause of the light military vehicle, and final user-evaluation tests of the jeep were conducted at The Infantry School.

Perhaps the most publicized achievement of our wheeled vehicles in World War II was the celebrated "Red Ball Express." Night and day, trucks rumbled between Normandy and the front lines. Until railroads and airports could be repaired and set in operation, the trucks supplied the advancing Allied armies.

The success of the Red Ball Express was typical of our wheeled vehicle operations during World War II. The horseless carriage had earned its triumph. The cavalry was in no position to comment on the trucks' performance: they were too busy trying to keep their newfangled tanks running!

Today and Tomorrow

World War II sent American vehicles around the world. They served in all kinds of weather, on every conceivable terrain. Major commanders were directed to study the problems of motor vehicle operation in their areas, and to forward suggestions and comments to Ordnance for review. From the Arctic came complaints of starting trouble in the freezing cold. Humid jungles showed the need for weatherproofing electrical connections and wiring against moisture and fungus. Insufficient flotation was the biggest problem in the desert. Plainly, the military truck had to become cosmopolitan.



The T-55 is influencing the design of future military vehicles.

The result of this survey was the new M-series of vehicles with their many improvements. Designed to meet the requirements of global combat, partially tested in the Korean conflict, we have in the M-series a fleet of modern military vehicles. Modern, that is, by the standards of the wars we have just fought. But yesterdays' war is ancient history. Will our vehicles still seem modern—tomorrow?

The advent of atomic field weapons places new demands on army transportation. Wide dispersion, rapid concentration and lightning movement are now

essential. The Infantry *must* be kept mobile—its very survival will depend on its ability to move quickly in small groups, to concentrate swiftly at the crucial point.

This means added stress on the truck as a personnel carrier. Its cargo space must be designed to accommodate troops as well. It must be faster, even more rugged and self-sufficient. It should be light enough to be carried by aircraft—perhaps even air-dropped.

The T-55 2½ ton truck, now being tested, fits this description. Made of aluminum down to the wheels and axles, the T-55 weighs only 9000 pounds—6000 less than conventional models. Its cab-over-engine design leaves ample room for troops and their equipment. An air-cooled engine replaces the troublesome liquid cooling system of our present vehicles. An automatic gearshift prevents stalling, and independent ball-joint suspension of each wheel, with torsion bar springing, gives maximum cross-country mobility. Other radical features include fuel injection, disc brakes, interchangeable front and rear axles. It can climb a 60 per cent grade and move at more than 60 miles per hour. The T-55 is not scheduled for production in quantity, but already it is influencing the design of military vehicles. Roomy, rugged, rapid, it is the first of the "atomic trucks."

Such experiments help the truck—and the Infantryman who rides it—keep pace with history. They open new perspectives in mobility, looking toward the day when the foot soldier will move at speeds the cavalry of Villa and Pershing never dreamed of.

In tracing the history of our modern military vehicles, PFC DAVID L. COHOE, JR., has displayed a genuine flair for research.

The erudite Pvt Cohoe is a member of Tau Beta Pi, Pi Tau Sigma and Kappa Tau Chi engineering societies. He is a graduate of Cornell University (1952) and the Graduate School of Chrysler Institute of Engineering (1954). Pvt Cohoe is presently assigned to the Technical Committee, Technical Training Group, Automotive Department, TIS.

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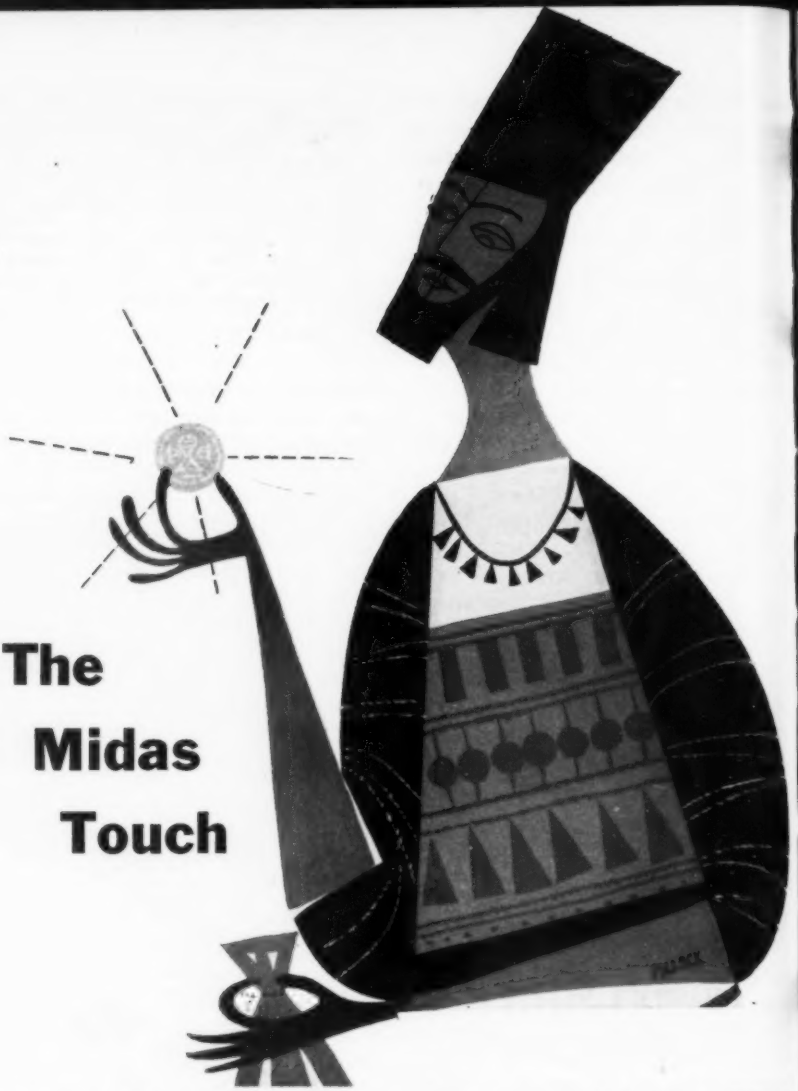

The Midas Touch

Poor King Midas! He didn't realize what suffering he was in for when he asked for all that gold. He learned—as we all do—that success doesn't come without working for it.

If you're willing to invest a little time and effort, Army Extension Courses offer a very practical reward. What's more, money can't buy an AEC subcourse (they're free). If you'd like more information, simply write:

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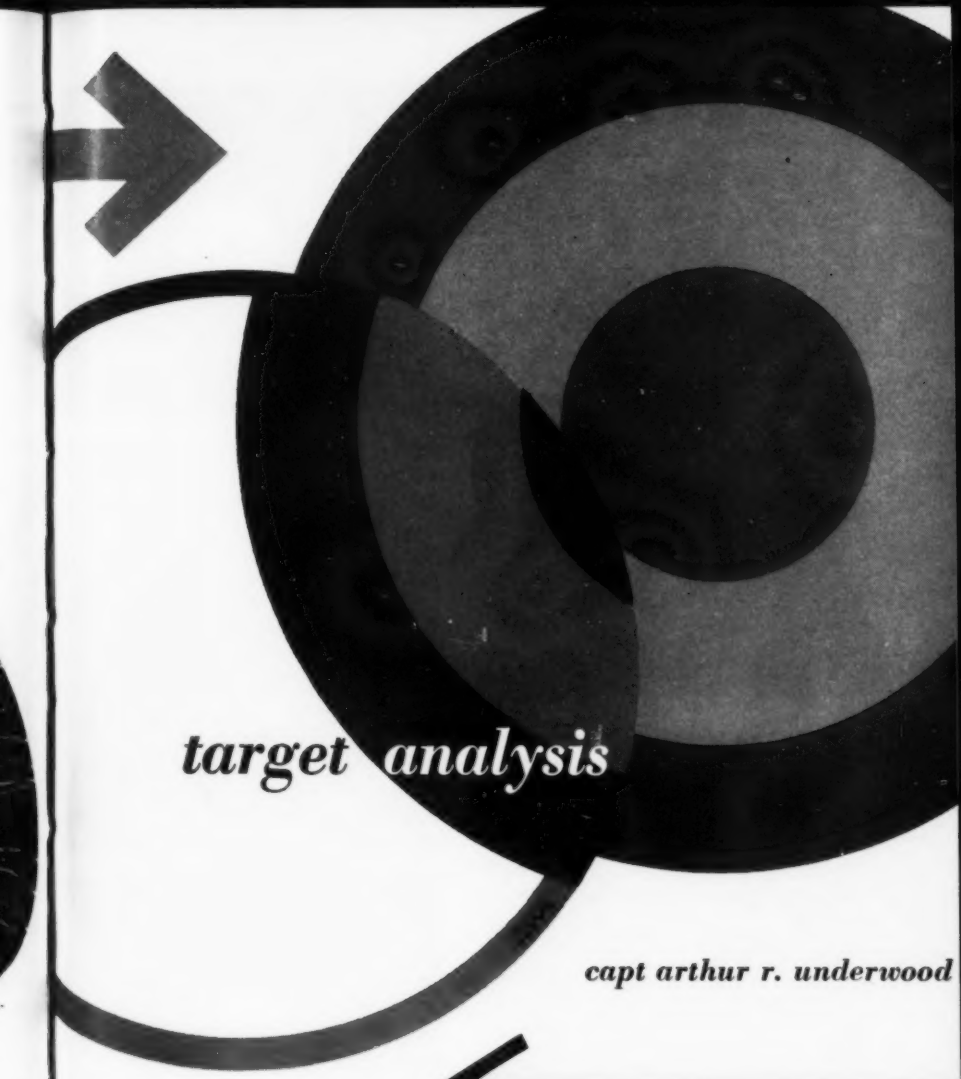


target analysis

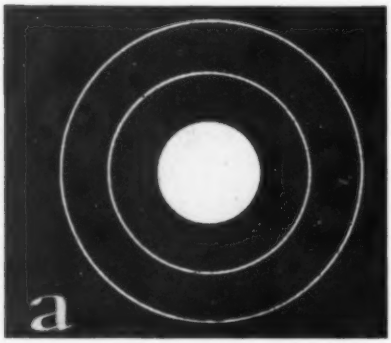
capt arthur r. underwood

In order for a doctor to treat a patient properly, he must make a thorough examination. If symptoms indicate that the patient is ill—the doctor will apply his knowledge and attempt to restore the patient to good health. It's time we applied these same principles to rifle marksmanship. With a simple system of target analysis, instructors should be able to diagnose and correct errors found in sustained fire before the soldier leaves the firing line.

Errors in sighting, position, trigger squeeze and breathing control cause the formation of characteristic patterns when the targets are spotted. Analyze the patterns and you'll be able to pinpoint the errors. I've selected seven targets which illustrate several of the most common errors

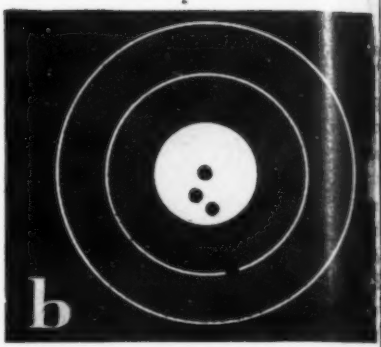
made by rifle marksmen. By studying these targets and the accompanying text, you should be able to adopt this system in your unit.

Target **a** shows hits spread all around the target: in the 3 ring and out. The pattern formed by the position of the hits gives us the clue. The wide circular dispersion of the spotters indicates that the firer was not getting the same sight pic-



ture each time he fired. The firer might tell us that he had the bull's-eye right on top of the front sight blade just like an apple sitting on top of a fence post—but that's not his error. The error is in the other part of his sight picture, i.e., sight alinement. It is probably the result of *watching* the bull's-eye, and trying to get it right on top of the front sight blade. This firer should concentrate the *focus* of his eye on the top of the front sight blade and then watch the hits close in on the bull's-eye.

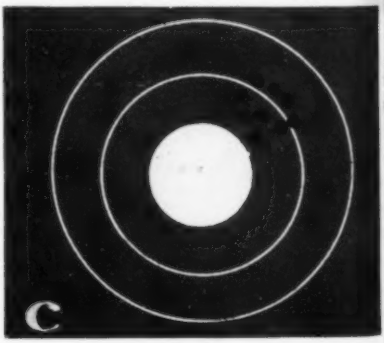
The man who shot at Target **b** had perfect alinement, but the pattern looks like the buttons on a vest. The spotters form a line which starts in the bull's-eye and goes down to the bottom of the target. This man should check the tension of his rear sight. Chances are, he'll find that the sight will slide down easily instead of being locked on one position. Each shot was placed lower than the preceding one as the sight was shaken down



by the recoil. One or two turns of the slotted lock screw on the windage knob will make all the shots as good as the first.

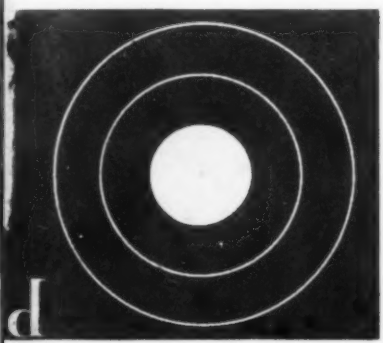
We find a very common error illustrated on Target **c**. The spotters show a good group which is a little high and to the right of the bull's-eye. (Actually the shot group may be anywhere out of the bull.)

All this man needs is a sight change to bring the center of his shot group into the center of the bull's-eye. It would be logical to assume that he obtained a "5" on a shot during slow fire with that sight setting and felt certain that the sights were set correctly. A bad zero



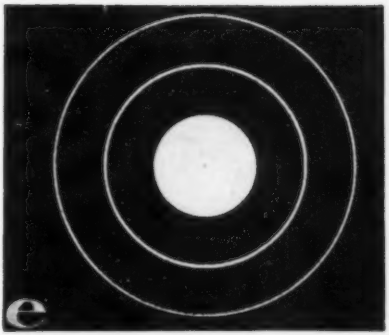
showed up clearly in sustained fire because all nine of the shots spotted showed the group to be misplaced. This is perhaps the easiest target to analyze and diagnose.

Target **d** has the spotters low — all across the bottom of the target frame. This firer might assure you that he had perfect sight pictures all the way through the sustained run and it would be even money that he did. Each time he saw that perfect sight picture he helped the round off by yanking the trigger. When he jerked the trigger, he threw the shot down toward the bottom of the target. Explanations won't help this man. It will take concentrated work, using the wall and dummy method, to convince the firer that he is jerking the trigger. The embarrassment will make him angry, but he'll wind up squeezing the trigger properly.



A variation of the above mentioned error is shown on Target **e**. The spotters are in the lower left hand corner of the target frame. This man is not as far gone as the last. He is simply "taking up the recoil" before he fires, i.e., he is anticipating and meeting the recoil by flipping his shoulder against the butt of the rifle as he yanks the trigger. He needs the same medicine as his predecessor. His dosage should be the same.

With Target **f** we should take a look at the man's firing position before we prescribe a remedy. This shot group starts in the bull's-eye. Because of this we can assume that he had a good zero. But, from the bull's-eye, the shot group



slants down into the lower right hand corner of the target frame. We've discovered a position error . . . something collapsed or gave way.

One or more of three errors might cause this pattern. The right elbow may have slipped back when he was firing, the sling may have been too loose or the left elbow may not have been under the rifle. Any one or a combination of these errors would cause the muzzle to move

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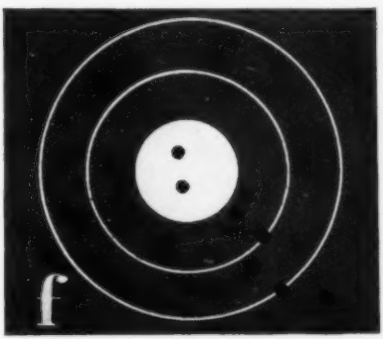
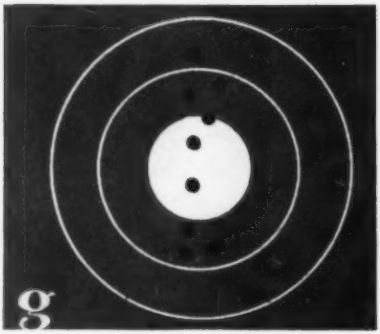


We've almost run out of things to say about CAPT ARTHUR R. UNDERWOOD, JR. This is his third article in as many issues.

In "Target Analysis," Capt Underwood leaves military history behind and gives us a really practical method of correcting errors made during sustained fire with the M1 rifle. Capt Underwood will have a chance to practice this system soon. He is attending Infantry Officers Advanced Class #1 at The Infantry School.

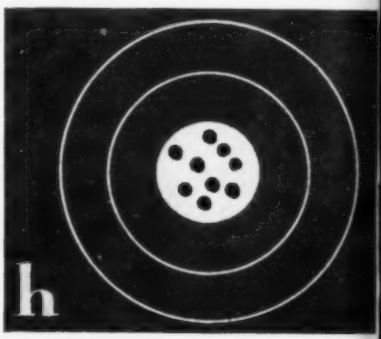


down and to the right. Correct the errors you find in this man's position, and he will be able to hold the shot group in and around the bull's-eye.

Target **g** has the pattern of spotters going up and down from the bull's-eye. This is probably the least common of the errors we've seen. Nevertheless, it may cause a man to lose points needlessly. The firer had a correct zero and was doing everything correctly, *with one exception*. He was *not* holding his breath when he squeezed the trigger. When his lungs expanded, the muzzle dropped. When he exhaled, the muzzle rose. He should be told to breathe deeply and exhale until he achieves the proper sight picture. When this is done, he should lock the remainder of his breath in this throat, take up the slack and *part* of the squeeze, and continue the squeeze until the rifle fires.

These seven targets have given us a picture of the most common errors made in sustained fire. Unfortunately, the firer may not make only one error at a time. Compounding of the errors may change the patterns slightly; however, the basic patterns will remain. The instructor must decipher and analyze the shot group from his knowledge of the basic patterns.

Target **h** represents the culmination of our efforts. This man should turn in an expert score. Mind you, this system of target analysis is no quick cure, but with hard work and determination, you should be able to help your men to help themselves. Together, you'll prove that target analysis really works.



HANNIBAL HAD AN IDEA

He introduced elephants in combat. What a surprise for the enemy! If you have a new idea—something of interest or value to other Infantrymen—send it to *The Infantry School Quarterly*. You may not make history, but the check will come in mighty handy. Send your article to: Editor, The Infantry School Quarterly, Pub & VA Office, The Infantry School, Ft. Benning, Ga.